Thanks for Your Selection of JAC Refine Cars

We sincerely welcome you to become a member of the owners of gradually increased JAC Refine cars. The advanced engineering technology and high quality product performance are the honors of our “JAC staff”.

This manual is applicable for Refine series car type. In order to drive your new car more safely and comfortably, please do carefully read this manual.

The special sale service shops of JAC Refine distributed throughout China will provide convenient, effective maintenance and repair service for your cars. Please contact us at any time when you have any questions, opinions or suggestions.

JAC will reserve the modification rights on this manual. We will not make other notice on any modification on the content of this manual.

This manual shall be regarded as one part of the car, if you decide to sale the car, please transfer all information along with the car to the new owners.

Individual Information of User	
License No. _____	License No. _____
Name _____	Name _____
Address _____	Address _____
_____	_____
Tel. _____	Tel. _____
Postal Code _____	Postal Code _____
Sale Date _____	Sale Date _____

You should know the followings before reading this instruction:

Warning symbols used in this manual

The safety of you and others is extremely important, and to safely drive your car is the important liability of the car owner. In this manual, the character marked with ⚠ in front is related to important safety description, and the meaning is as follows:

⚠ **Warning** The operation failing to abide by the instruction may lead to the serious consequence that harms the life of you and other. Please treat according to the warnings.

⚠ **Notice** The operation failing to abide by the instruction may lead to the damage of your car or the equipment. Please treat according to the notices.

Statement of environmental protection

The character marked with in front is the statement of important environmental protection.

Maintenance Key Points

Refer to the maintenance requirement of JAC Refine Car type in Chapter IV of this manual. As the car owner, you are responsible for carefully reading the correct maintenance method provided by the manufacturer. The car needs better maintenance if running under the bad environment. Please refer to the maintenance knowledge required by the running under the bad environment situation in this chapter.

Use Notice of Oil Product

This company will not provide quality guarantee for the damage of the engine and transmission caused by using unqualified fuel and lubricant, even though within the warranty period. Please do use the qualified fuel and lubricant.

Do not Arbitrarily Refit Your Car

The refitted components are not within the warranty range.

The refit may affect the safety, durability and other performances of the car, therefore do not try to refit your car under any situation.

Please Use Pure JAC Part

- What's pure JAC part?

Pure JAC part refers to the part in accordance with the part used in the car production of JAC. The design and inspection of these part can provide optimum safety guarantee for the customers.

- Why do we use the pure part?

Pure JAC part is the part manufactured under strict production management and quality inspection. The failure caused by using mimic, counterfeit or smuggled part will not be within the warranty range of this company, and this company will not bear any liability on the damage of other original product caused by this.

- Please correctly identify and choose to buy original pure JAC part.

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The beginning of each part has detailed catalog, please search and read according to your need.

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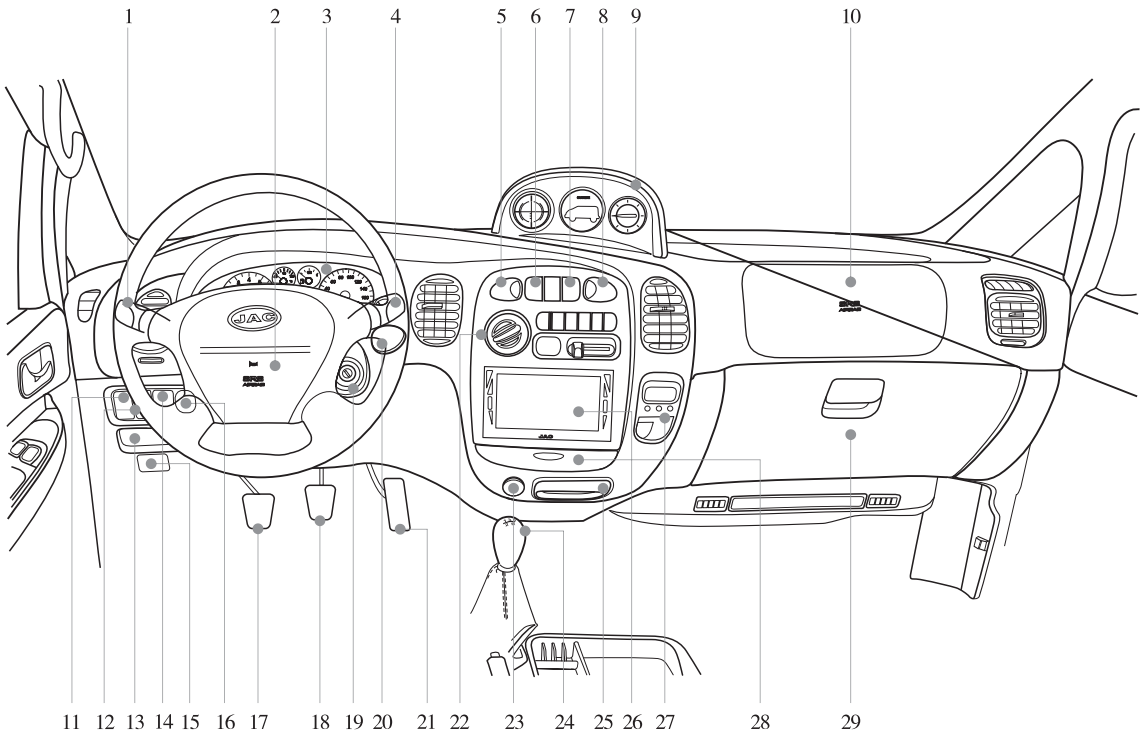
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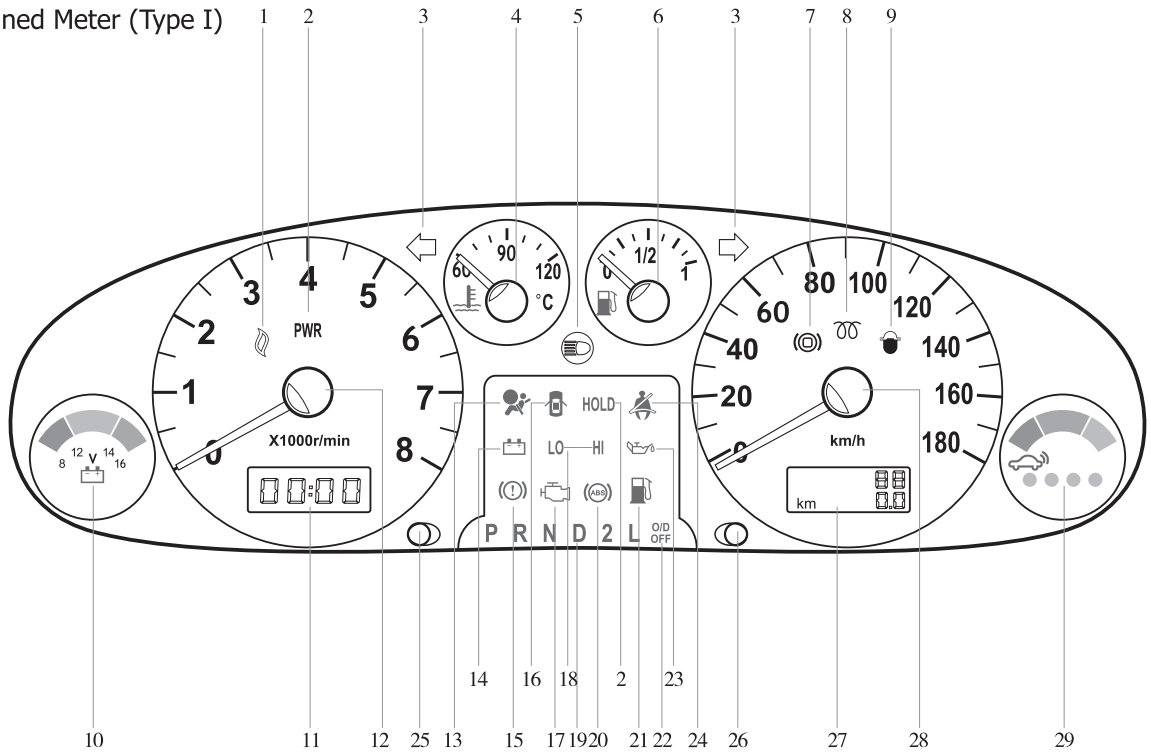
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Survey Map of Driving Cab (Type I)

1. Light Combined Switch
2. Driving Trumpet
3. Combined Meter
4. Wiper Switch
5. Hazard Warning Light Switch
6. Front Fog Light Switch
7. Rear Fog Light Switch
8. Rear Window Defrost Switch (if Equipped)
9. Multifunctional Meter (if Equipped)
10. Safety Air Bag on Passenger Seat (if Equipped)
11. Ceiling Light Switch
12. ECT Control Switch (if Equipped)
13. Oil Tank Cover Release Bar
14. Panel Board Brightness Adjustment Knob
15. Engine Cover Release Bar
16. Idling Control Valve (if Equipped)
17. Clutch Pedal
18. Brake Pedal
19. Ignition Switch
20. Rear Hot Air Switch (if Equipped)
21. Accelerator Pedal
22. Air-Conditioning Control Panel
23. Cigar Lighter
24. Control Lever of Transmission
25. Ashtray of Front Seat
26. Acoustic Control Panel and LCD (if Equipped)
27. Clock (if Equipped)
28. Drive Cup Rack
29. Storage Box

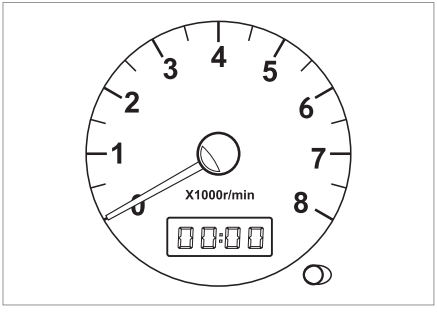
Combined Meter (Type I)



1. Fuel Gas Mode Indicator Light (if Equipped)
2. PWR/HOLD Indicator Light (if Equipped)
3.Directional Signal Indicator Light
4. Water Thermometer
5.High Beam Indicator Light
6.Fuel Gauge
7.Braking System Warning Light (if Equipped)
8.Diesel Fuel Preheat Indicator Light (if Equipped)
9.Fuel Filtering Warning Light (if Equipped)
10.Excel Tester
11.Electronic Clock
12.Tachometer
13.Airbag SRS Indicator Light (if Equipped)
14.Charge Warning Light
15.Brake Fluid and Parking Braking Warning Light
16.Car Door Opening Warning Light
17.Engine Failure Indicator Light
18.Four-Drive Switch Indicator Light (if Equipped)
19.Auto Gear Indicator Light (if Equipped)
20.ABS Warning Light (if Equipped)
21.Fuel Warning Light
22.Overgear Switch Indicator Light (if Equipped)
23.Oil Pressure Warning Light
24.Safety Belt Warning Light (if Equipped)
25.Clock Setting Button
26.Odometer/Hodometer Reset Button
27. Odometer/Hodometer
28.Speedometer
29.Backing Warning Indicator Light (if Equipped)

Tachometer/Clock

Tachometer records the rotating speed of engine per minute (rpm).



⚠ Notice

The speed of the engine in the driving shall not rise to the red area. The excessive high rotating speed of engine may cause serious damage on engine, and you will not obtain the warranty.

Switching to high shift as soon as possible is helpful to save fuel and reduce noise.

If the rotating speed is lower than 1200 rpm, you should switch the shift downward.

The high rotating speed shall be avoided in the running-in period.

Clock Setting

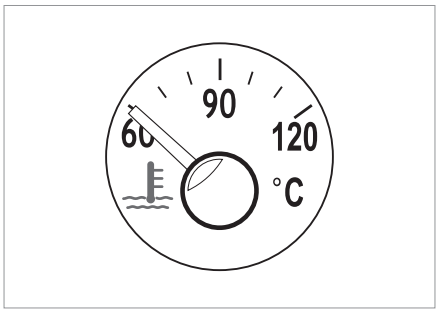
The clock LCD is suited in the center under the speedometer.

Long press the reset button, the “HOUR” and “MINUTE” glitter separately and can be adjusted at the time;

When the “HOUR” and “MINUTE” glitter, shortly press the reset button to set the time;

After setting, the system automatically exits the setting mode.

Water Temperature Meter



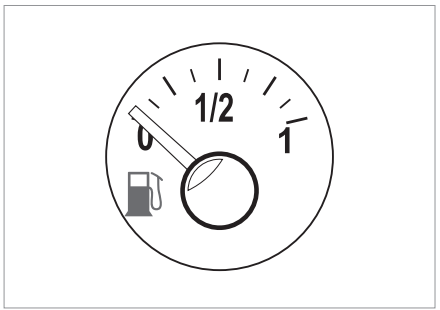
The indication of the cooling water temperature meter of engine shall be within normal range. If the pointer is across the red area on the meter, immediately stop the car, stop the engine, open the engine cover, and check the cooling liquid volume and water pump convey belt. If the cooling system has failure, contact the special sale service shop of JAC to examine the system.

⚠ Warning

Do not open water tank cover when the engine is overheated. Otherwise the cooling liquid of the engine will burst out under the pressure and lead to burning injury. Therefore, you must open the water tank cover only after the engine is fully cooled.

If the alarm light is bright in the driving, first check the cooling liquid temperature display. If the pointer points at the middle area, find a chance to fully add the cooling liquid. If the pointer points at “H” area on the right side of the display area, it means the temperature of cooling liquid is too high. Stop the car, stop the engine and conform the failure cause.

Fuel Oil Gauge

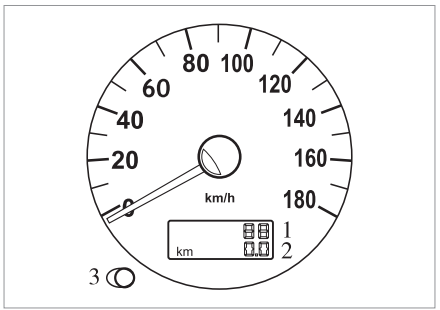


This indication works under the switch-on status of ignition switch. When the pointer reaches the spare area and the fuel oil alarm light is bright, it means there are about 7 L fuel oil left, and shall fill oil at the near oil station so as to assure the normal operation of the car.

⚠ Notice

It is suggested to use 93# or above unleaded gasoline.

Speedometer/Odometer/Hodometer



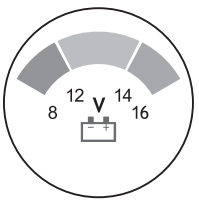
Car speed meter records the running speed of the car, and takes km/h as the unit.

1. Odometer. This meter records the accumulation of running distance.

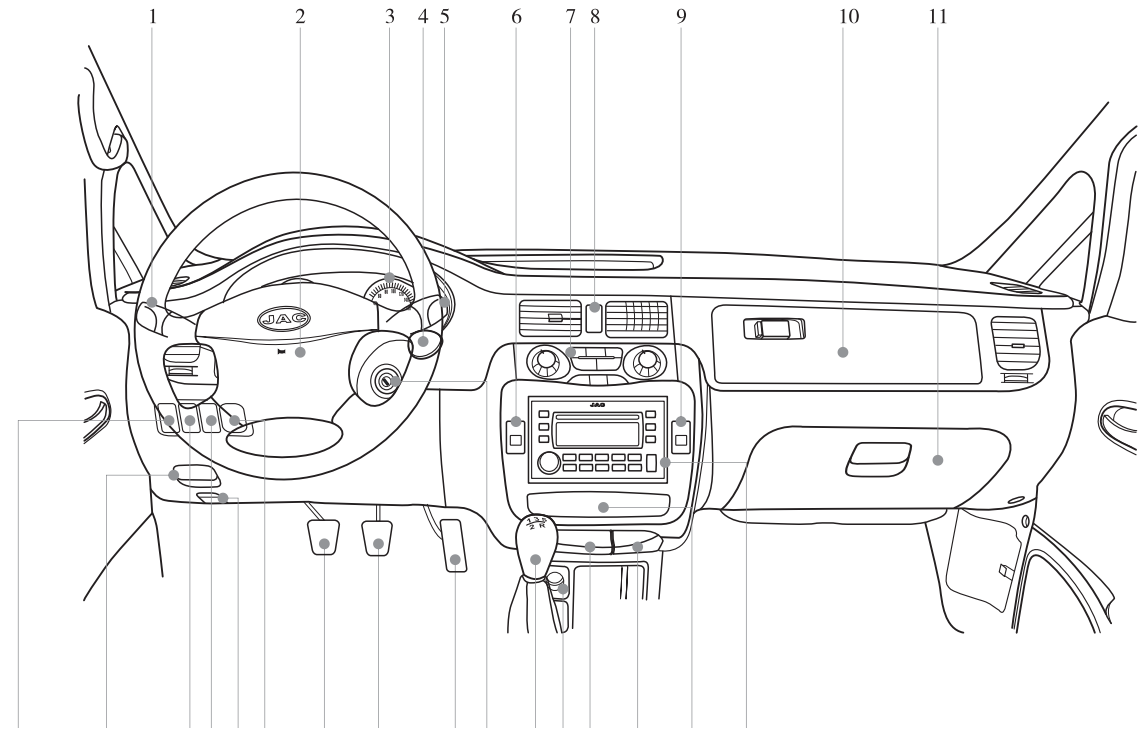
2.Hodometer.This meter records the short distance.

3.Reset button.The hodometer can be reset by pressing the reset button under the car speed meter.

Battery Voltmeter



The excel tester shows the work volt of the car battery, and the normal voltage shall not exceed the green zone in the middle. If it is always under too high or too low voltage for long time, it will cause damage to the car. If you find the voltage of the battery is too high or too low, please go to the Refine Xianghe authorized Sales Service Store for checking.



Survey Map of Driving Cab (Type II)

1.Light Combined Switch

2.Car Loudspeaker

3.Combined Meter

4.Rear Hot Air Switch (if Equipped)

5.Wiper Switch

6.Front Fog Light Switch

7.Air-Conditioning Control Panel

8.Hazard Warning Light

9.Rear Fog Light Switch

10.Front Seat Small Storage Box

11. Front Seat Big Storage Box

12.Ceiling Light Switch

13.Fuel Tank Cap Release Pull Rod

14.Dashboard Brightness Adjusting Knob

15.ECT Control Switch (if Equipped)

16.Engine Cover Release Pull Rod

17.Idling Control Valve (if Equipped)

18.Clutch Pedal

19.Brake Pedal

20.Accelarator Pedal

21.Ignition Switch

22.Control Lever of Transmission

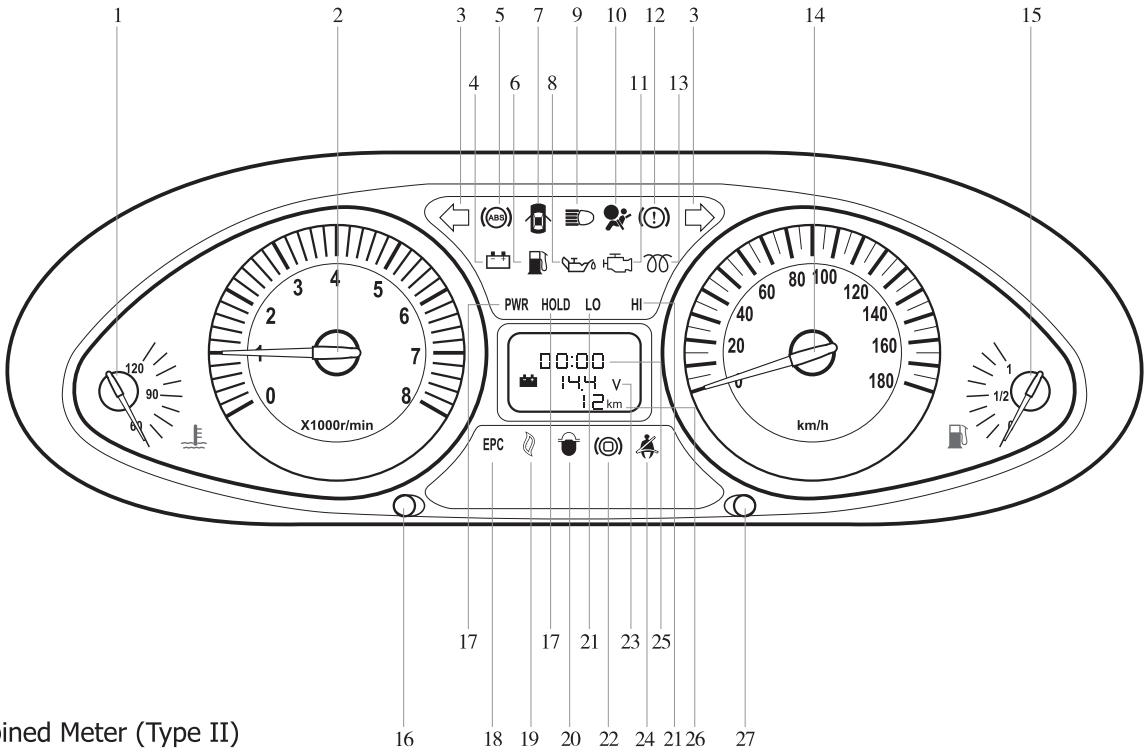
23.Power Socket (if Equipped)

24.Front Seat Ashtray

25.Cigar Lighter

26.Dashboard Small Storage Box

27.Acoustic Control Panel



Combined Meter (Type II)

1.Water Thermometer

2.Tachometer

3.Directional Signal Indicator Light

4.Charge Warning Light

5.ABS Warning Light (if Equipped)

6.Fuel Warning Light

7.Car Door Opening Warning Light

8.Oil Pressure Warning Light

9.High Beam Indicator Light

10.Airbag SRS Indicator Light (if Equipped)

11.Engine Emission Failure Indicator Light

12.Brake Fluid and Parking Braking Warning Light

13.Diesel Preheat Indicator Light (if Equipped)

14.Speedometer

15.Fuel Gauge

16.Clock Setting Button

17.PWR/HOLD Indicator Light (if Equipped)

18.Engine Failure Indicator Light

19.Fuel Gas Mode Indicator Light (if Equipped)

20.Fuel Filtering Warning Light (if Equipped)

21.Four-Drive Indicator Light (if Equipped)

22.Braking System Warning Light (if Equipped)

23.Excel Tester

24.Safety Belt Warning Light (if Equipped)

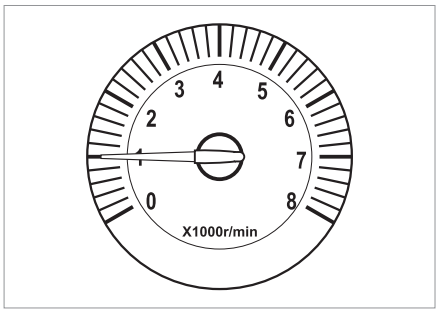
25.Electronic Clock

26.Odometer/Hodometer

27.Odometer/Hodometer Reset Button

Combined Meter (Type II)

Tachometer



The speedometer records the rotation (rpm) speed of the engine in each minute.

⚠ Notice

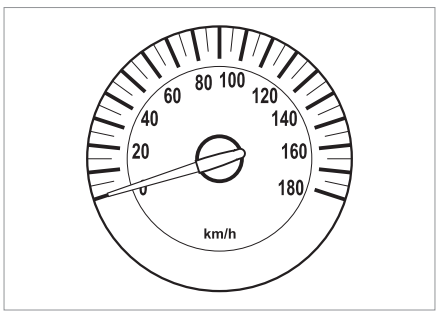
When driving, pay attention to that the engine speed display shall not rise to the red zone, over high engine rotation speed may cause serious damage to the engine and you may never gain the warranty.

❀ Switching to high gear as early as possible is helpful for saving fuel oil and reducing noise.

If the rotation speed is lower than 1,200 rotation/min, you should switch the gear downward.

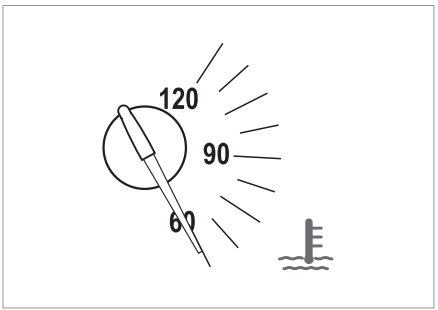
High rotation speed should be avoided during the run-in of the car.

Speedometer



The speedometer records the running speed of the car, which takes kilometer as the unit. (km/h).

Water Thermometer



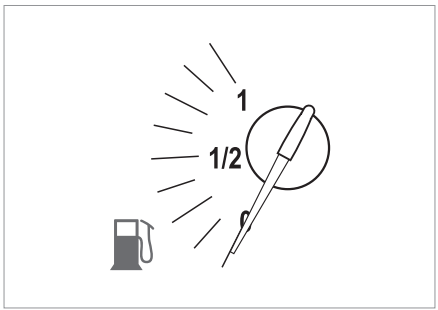
The cooling water thermometer indication of the engine shall be in the normal range. If the pointer moves beyond the red zone of the indicator dial, the car and the engine shall be stopped and the engine cover shall be opened; if the cooling system has failure, contact the special sale service shop of JAC Refine to examine the system.

⚠ Warning

Do not open the water tank cap when the engine is over heat; otherwise, the cooling fluid may burst out because the pressure and cause burning injury. Therefore, the water tank cap can be opened until the engine is fully cooled.

If the warning light is on during driving, first check the temperature display of the cooling fluid. Find a chance to fill the cooling fluid when the pointer points at the middle zone. The pointer points as the “H” zone on the right side of the display zone, which indicates that the temperature of the cooling fluid is over high, so the car is stopped and the engine is shut to confirm the failure reasons.

Fuel Gauge

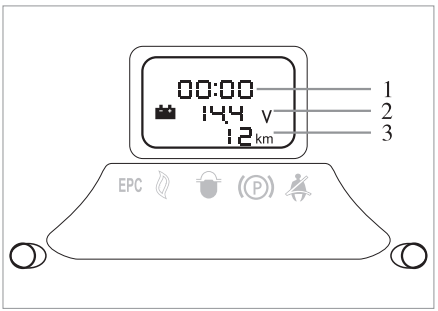


The indication works when the ignition switch is under connection state. The fuel warning light is on when the pointer reaches the spare zone, which shows that 7 liters fuel is left. Add fuel at the near gas station as soon as possible to ensure the normal running of the car.

⚠ Notice

Please use 93# or above unleaded gasoline.

Clock/Battery Voltage Odometer/Hodometer



1. Clock: after long press the adjusting button on the left for over 2s, the hour section glitters, and at the time, the adjusting button is pressed to adjust the hour. Enter the minute setting automatically after 6s pause. Continuously press the adjusting button can adjust the minute.

2. Battery voltage: display the working pressure of the car storage battery in the current state.

3. Odometer/Hodometer: the display switch between the hodometer and the odometer can be realized by pressing the adjusting button on the right side for less than 2s. The hodometer can return to zero by pressing the adjusting button more than 2s in the display state of the hodometer.

Alarm light and indicator light



Safety Air Bag SRS Indicator Light

When the ignition switch of car is at “ON” position or after starting the engine , the safety air bag SRS indicator light is bright and continues to glitter for 6s, and then is off. The indicator light will be on when the safety air bag SRS system is abnormal. When the ignition switch is at “ON” position or the engine is started, SRS indicator light is off, continues to be on after glittering for 6s or is on during the driving, so contact the special sale service shop of JAC Refine to examine.



High Beam Indicator Light

When the headlight switch turns to the high beam position, the indicator light is on.



ABS Alarm Light

When the ignition switch is turned to “ON”, ABS alarm light is on, and off after 6s if the system is normal. When the alarm light is always on, or on during the driving, or not on when the ignition switch is turned to “ON”, it means ABS has failure. At this moment, contact the special sale service shop of JAC Refine as soon as possible to examine the car. At this moment the ordinary braking system is still normal, but the anti-lock braking system doesn’t work.

⚠ Warning

If ABS alarm light and braking liquid alarm light are always on or on during the driving, E.B.D. (Electronically Brake Distribution system) may have failure; if the failure happens, avoid emergent braking and contact the special sale service shop of JAC Refine to examine as soon as possible.



Over Speed Indicator Light (if Equipped)

Turn on the over speed driving switch, meanwhile the transmission manipulation is at Shift 4 position, the indicator light is off, the switch will be off in the over speed driving, and the light yellow indicator light glitters (only set in auto shifting car).



Directional Signal Indicator Light

The green glittering arrow on the panel board will indicate the turning. If the arrow is only displayed without glittering, and the glittering frequency is fast or totally not displayed, it means the directional signal system has failure. You can contact the distributors who will repair.



Engine Oil Pressure Alarm Light

When the engine oil pressure is insufficient, the engine oil alarm light will be on. Under the normal situation, the engine oil alarm light will be on when the ignition swatch is turned to “ON”, and off when staring the engine. If the engine oil indicator light is still on when the engine is running, there will be serious failure. Under this situation, immediately stop the car to assure the safety, and check the engine oil volume. If the engine oil is insufficient, supplement proper oil volume and restart the engine. If the indicator light is still on after filling the engine oil, contact the special sale service shop of JAC Refine to examine the system.

⚠ Notice

If the engine oil alarm light keeps on when the engine is running, the engine will be seriously damaged.



Parking Brake Alarm Light Brake Oil Level Alarm Light

When setting parking brake and turning the ignition switch to “ON” or “START”, this alarm light will be on, and the alarm light will be off when releasing the parking brake after staring the engine.

The alarm light will also be on when the ignition switch is at “ON” or “START” position without setting parking brake, and will be off when staring the engine. If the alarm light is on at other moments, slow the car and stop the car after driving to the safe position.

When the oil volume in the main brake tank is insufficient, the alarm light will be on. After supplementing proper brake oil conforming to DOT4 specification; if there is no other failure, carefully drive the car to the special sale service shop of JAC Refine to examine. If there is other failure, do not drive the car, use special tow truck device or other safe modes to send the car to the service shop for repair.

⚠ Warning

When you think that the brake has failure, please quickly contact the special sale service shop of JAC Refine and examine. It is dangerous to use the car when the braking system has failure and injury may be caused.



Charge Alarm Light

When the ignition switch is at “ON” position, the charge alarm light will be on and will be off after staring the engine. The charge system will have failure if the alarm light is still on when the engine is running. At this moment, if your car is still running, stop the car and engine, and check the engine. First check whether the engine belt has displacement, and check the fastening degree of the belt if no. You can contact the special sale service shop of JAC Refine to examine.



Car Door Alarm Light and Alarm Sound

The alarm light will be on to remind you that one car door fails to be safely closed if the car door fails to be closed. The alarm sound will indicate you that the door of driving seat fails to be safely closed.

Note: There will be the alarm sound only when the key is in the ignition switch and the side front driving door is open. The alarm sound will stop when you pull the key out of the ignition switch or close the side front driving door.



Safety Belt Alarm Light (if Equipped)

When the ignition switch is turned from “OFF” to “ON” or “START”, and the light is on; you should tie the safety belt after starting the engine, and then the alarm light will be off.



Fuel Alarm Light

When the left fuel oil is not sufficient, the fuel oil alarm light will be on. At this moment, add the fuel oil as soon as possible. When the fuel oil alarm light is on or the oil level is lower than “E”, the car driving will lead to the engine kill and damage on the catalytic purifier.



Water Temperature Alarm Light

If this alarm light is on during the driving, first check the cooling liquid display. If the pointer points at the middle area, find a chance to full fill the cooling liquid. If the pointer points at the “H” area on the right side of the display area, it means the temperature of the cooling liquid is too high. Stop the car and engine and confirm the failure cause.



Engine Failure Alarm Light

his light is one part of the inside diagnosis system, which can monitor the failure of the engine. When the ignition switch is turned to “ON”, the alarm light is on and off after starting the engine.

Please contact the special service shop of JAC Refine to examine the failure if this light is on during the driving or not on at “ON” position.



POWER/HOLD Mode Indicator Light (if Equipped)

If your car is equipped with electric control double-range auto transmission, the indicator light will be on when you choose POWER or HOLD mode; the indicator light will be off when you choose NORMAL mode.



Diesel Oil Preheating Indicator Light (if Equipped)

The indicator light is on when the ignition switch is at “ON” position. The engine can be started when the indicator light is off. The lighting time of the indicator light will be different according to the water temperature.

Water Temperature (℃)	On Time of Light（S）
Lower Than−30℃	15
−20℃	10
0℃	3
20℃	2
40℃	1

⚠ Warning

If the engine fails to be started within 10s after the preheating is finished, turn the ignition key to “LOCK” position, then to “ON” to preheat again.



Fuel Filter Alarm Light (if Equipped)

This light will be on when the ignition switch is at “ON” position, and will be off after the engine is started; if the light is on when the engine is running, it means the fuel filter is full of water, and the water shall be drained.

Backing Warning Indicator Light (if Equipped)

When the car with the backing warning system is backing, the system will remind the driver of attention by light and buzzing based on the distance of the barrier behind the car.

⚠ Warning

The backing warning system is only an electronic auxiliary system and shall be subject to the actual reference objects during driving.

Paring Brake Alarm Sound (if Equipped)

If the starting speed reaches 10km/h, and the manual brake fails to release after operating for 2-3s, there will sustain resounding.



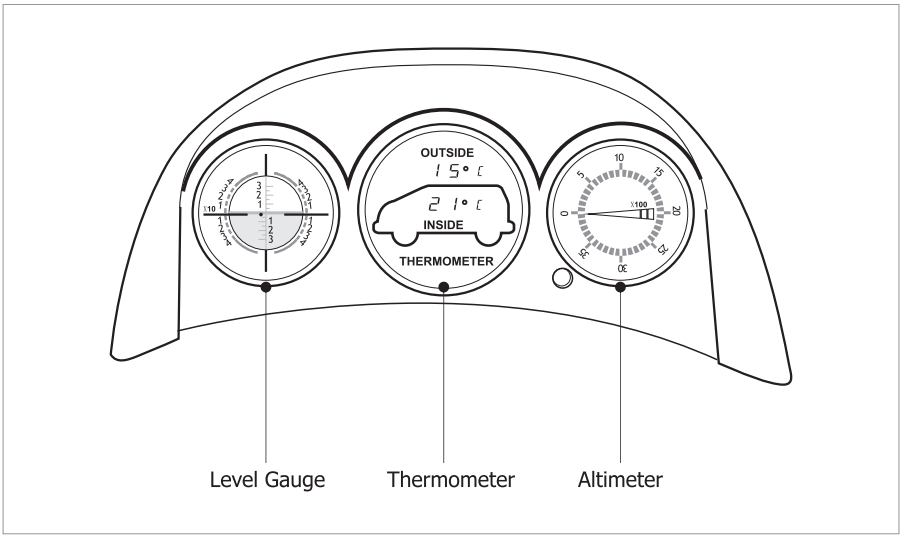
Auto Gear Indicator Light (if Equipped)

The light indicates the operation state of the auto transmission:P-park, R-reverse, N-neutral, D-driving, 2-second and L-low

The detailed instruction of the gears and functions of the auto transmission refer to the section “Auto Transmission” on page 65.

Multifunctional Meter

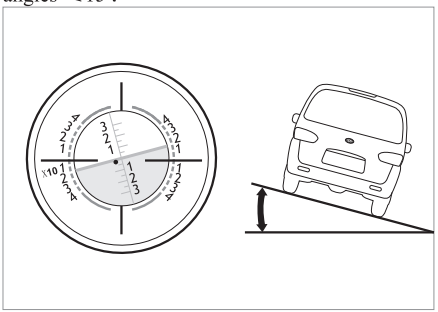
Multifunctional Meter Layout (if Equipped)



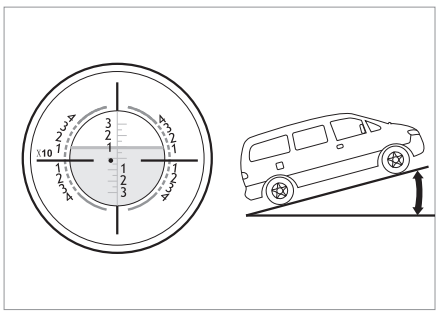
Level Gauge

The level gauge indicates the slope angles in front and on the rear and on the left and right of the car.

1.Incline left and right (the left and right slope angles $\leqslant 15^{\circ}$.



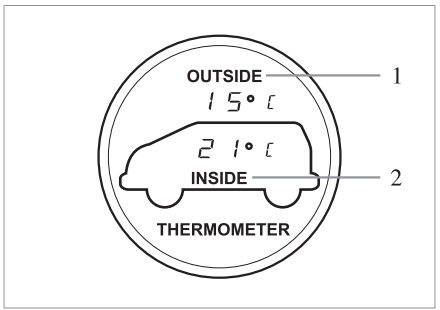
2.The front and rear slope angles (front and rear slope angles≤20°).



⚠ Notice

When the car does not move, the level gauge can indicate correct slope angles, but the number may have little error when the car is running.

Thermometer



The thermometer displays the temperature inside and outside when the ignition switch is at the "ACC" or the "ON" positions.

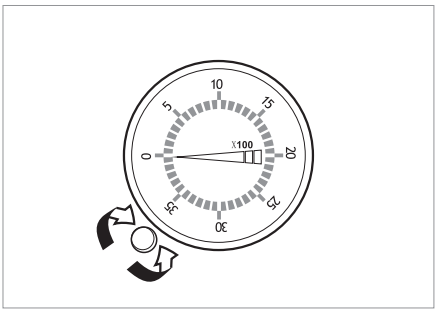
1. Temperature inside; 2. Temperature outside

⚠ Notice

►The temperature displayed on the thermometer is a little different from the actual value based on the ambient temperature and the running condition, etc.

►The display value distortion will be caused when the temperature inside and outside is lower than -30℃ or higher than 70℃.

Altimeter

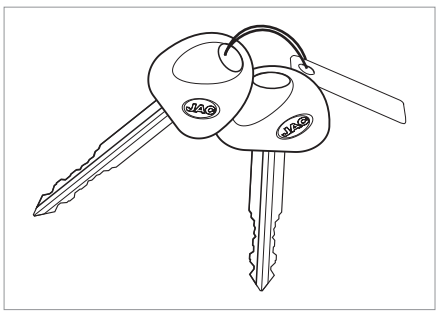


Adjust the adjusting button on the indicator dial to zero before driving car and the altimeter will display the relative altitude of the destination.

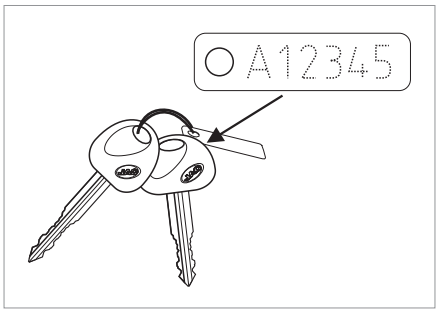
Key

For the convenience of your travel, the two keys attached with the car can lock all doors of the car.

The car can be locked without using key, therefore please keep one key in the safe place for standby key for fear of leaving one key in the car.



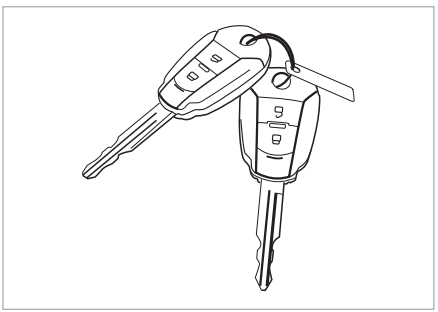
Key Code



When the car is sold for the first time, the key code is recorded on a metal sheet (this metal sheet is connected with the key). The metal sheet with the key code shall not be put off the key ring and shall be put in the safe place.

The key code shall be recorded and put in a safe place so as to be found under emergent situation. Besides, if you lose the key, you can only provide the key code, the special sale service shop of JAC Refine will prepare a new key for you.

Key with Remote Functions (if Equipped)



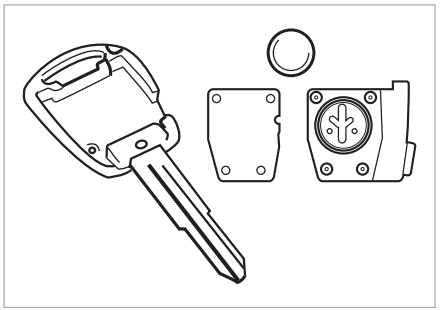
The key can lock and unlock all the car doors.

Unlock the car doors in the clockwise direction and lock the car doors in the anticlockwise direction.

Replacement of Battery

When the battery of the remote controller is short of power, you may need to press the button for several times to lock and unlock, meanwhile the indicator light will not be on. Replace the battery as soon as possible.

Battery type: CR2032



Replacement statement:

1.Loosen the bolt with the screwdriver.

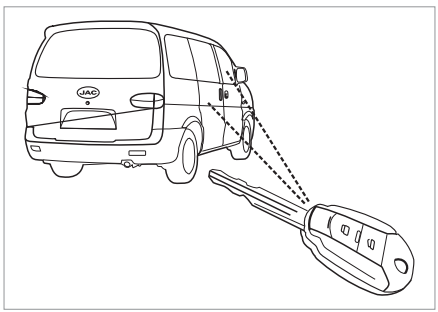
2.Use flat head screwdriver to separate the small box, just as the picture shows.

3.Loosen the four bolts behind the inlaid circuit.

4.Take the old battery out of the box, and remember the polarity of the battery. Assure the polarity of the new battery to be the same (the anode is upward), then put the new battery into the remote controller.

❀Please abide by relevant environmental protection regulations when treating the scraped old battery.

Anti–Theft Alarm System (if Equipped)



This system is designed for preventing the unauthorized from getting into the car; there are three kinds of operating status in this system:

1. Guard
2. Alarm
3. Released

The system will have the alarm sound if being touched.

Guard Status

Stop the car and the engine, operate according to the following steps:

1.Pull the ignition key out of the ignition switch.

2.Confirm that the engine cover, rear door and all car doors have been locked. 3. Lock the door with remote controlled key.

After completing the above steps, the directional signal lamp will glitter once to show that the system has been in the guard status.

Remark:

1.If any car door, rear door or engine cover is still open, the system will fail to be under the guard status.

2.Reset the system to be the guard status according to the above steps if there is above situation.

⚠ Notice

This operation shall be made when there is nobody in the car. Otherwise the alarm system will be activated when the passenger leaves.

Alarm status

When the car stops and is under the guard status, the system will be activated if the following situations occur:

1. Fail to use the key or the remote controller to open the front door and the rear door.

2. Fail to use the key to open the rear door.

3. Open the engine cover.

The system will alarm and start starting suppression. The mode is: the trumpet moos and the alarm light will be on for 27s and stop for 10s in three cycles. Use the remote controller to unlock, the turning light will glitter twice, and the alarm system can be closed.

⚠ Notice

Avoid starting the engine when setting this system.

Release the alarm status

Press “UNLOCK” button on the remote controller to unlock all car doors, meanwhile the directional signal light glitters twice, then the anti-theft mode is released.

•Once the guard status is released, except for repeating the guard procedure, no method can set the guard status.

•The ceiling light switch in the car is at “DOOR” position, the system releases the guard status, and the ceiling light will be on for 30s.

⚠ Notice

The alarm status can be released only by using the remote controller. The following operation shall be required if the remote controller fails to release:

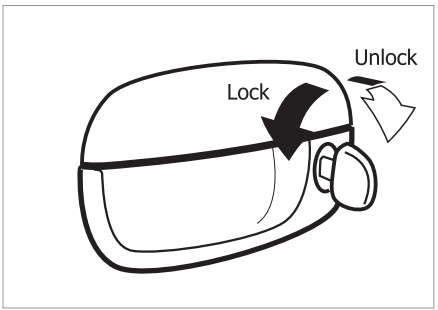
1.Unlock by the key and meanwhile activate the alarm.

2.Plug the key into the ignition key hole; turn the key to “ON” position. 3. Wait for 30s.

The system will release the guard status after completing the above steps.

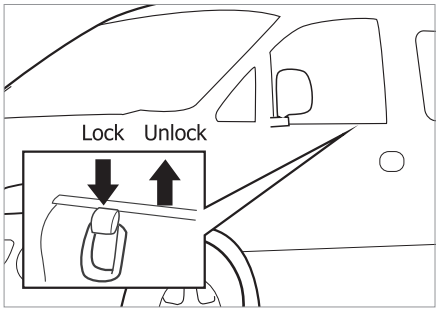
Car Door

Use the key to open and lock the door

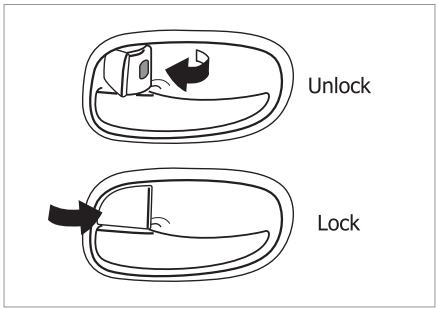


The key can lock and unlock all car doors. Unlock the car doors in the clockwise direction and lock the car doors in the anticlockwise direction.

Lock the Front Door Without a Key



Type I: The car door can be locked without a key. Push the ignition switch in the car to the position of “LOCK”, then pull out the key; press the lock button to the lock-up position, and then the car door is locked.



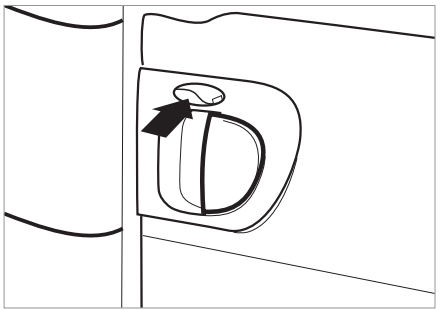
Type II: The car door can be locked without a key. Push the ignition switch in the car to the position of “LOCK”, then pull out the key, push the lock button in the car forward until the red mark on the switch cannot be seen, and then the car door is locked.

⚠ Warning

►The unlocked car door is very hazardous. Confirm that all the car doors have been closed and locked before leaving (especially when there is child in the car); do not let the passenger in the car open the car door by mistake. It assures that the car door will not be suddenly opened. In the accident, using the safety belt and the mode of locked car door can prevent the passenger from being thrown out.

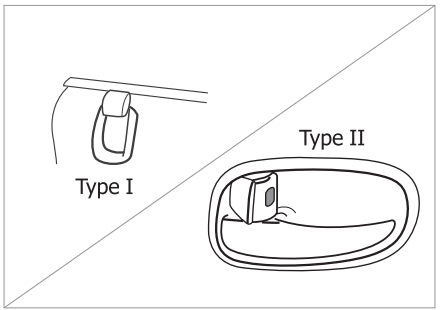
►Observe the surrounding traffic situation before opening the door to avoid the accident.

Lock the Sliding Door without a Key



Press the inside lock-up button to the lock-up position then close the door.

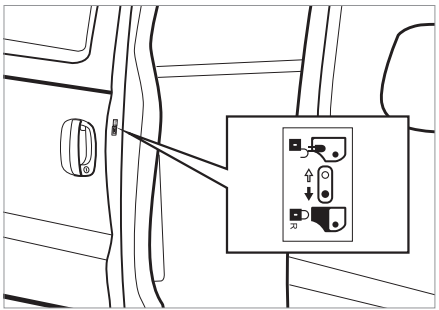
Central Lock



Type I: the central control lock is located on the plaque in the car. Press the button and all the car doors are locked. Pull the button upward and all car doors are unlocked.

Type II: the central control lock is located on the handle of the car door. Push the button forward until the red mark cannot be seen and all the car doors are locked. Push the button backward until the red mark is seen and all the car doors are unlocked.

Child Safety Lock



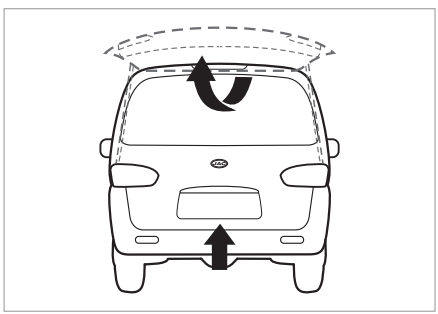
Set Child Safety Lock

If your car is equipped with rear car door child safety lock, the rear car door will not be opened from inside of the car. The manual recommended using this device when the child sits on the rear chair. The child safety lock on the rear edge of the rear car door must be pressed to " " position before closing the door when setting the child safety lock.

Release the Child Safety Lock

For releasing the safety lock, open the rear car door from outside of the car and press the child safety lock on the rear edge of the rear car door to " " position.

Rear Door (Lifting Type)



Refine car adopts lifting type rear door.

Pull the handle out and lift the rear door to open the door.

Push down the rear door with slight force to close the door.

⚠ Notice

◆If the rear door of Refine Xianghe car with anti-theft system fails to be closed or fails to be totally closed, the anti-theft system configuration will be invalid.

►Do not press the rear door towards the rear windshield by hand. This may cause the crack of the rear windshield and cause wound.

►Pull upward the rear door to check if the lock-up mechanism has been totally occluded whenever closing the rear door. Otherwise the rear door may suddenly be opened in the driving.

►Never drive when the rear door fails to be totally closed or open. Because the tail gas may back pour into the car and cause poisoning.

Car Window

Electric Window Manipulation

When the ignition switch is at "ON" position, the electric glass window is under controllable status.

Closing and opening manipulation of main car window

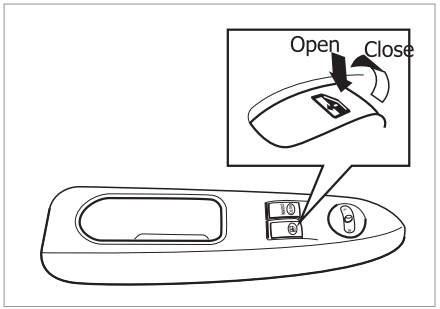
The main switch on the left side of the driving seat controls the front windows on the two sides respectively, press the switch to open the window, and loose the switch after the window stops at the required position. Pull the switch upward to close the window.

Auto lifting glass window

Press the button, the glass window can fall to the maximum position, then pull the switch upward to remain the window at the required height.

⚠ Notice

Never turn on the main switch and subsidiary switch along different direction; otherwise, the window will stop and not be opened or closed.



⚠ Notice

◆When you — even though temporarily — leave the car, do pull the ignition key out. Please pay attention not to leaving the child alone in the car.

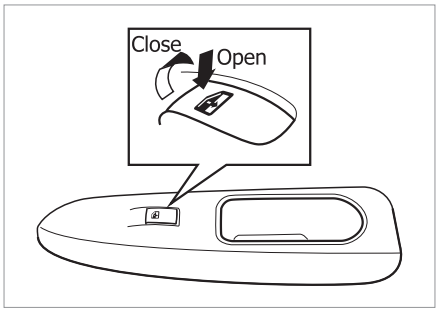
►Be careful when closing the car window! The carelessness or closing car window without control may cause crushing injury.

Note: Only when controlling the left door windows to descend, the AUTO (automatically descending to the lowest position) and inching shifts are on the main shift of the driving side, and others only have inching function.

Opening and closing manipulation of car window of passenger seat

•Opening: Press the lower plane of the switch. The car window will be opened.

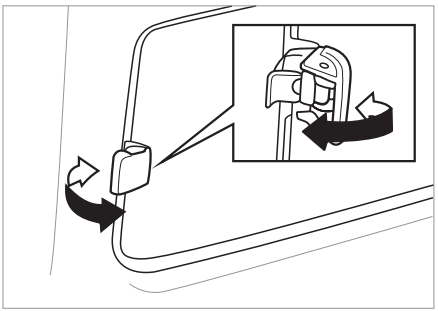
• Closing: Pull the switch upward, the car window will be closed.



Rear Side Window with Hinge (if Equipped)

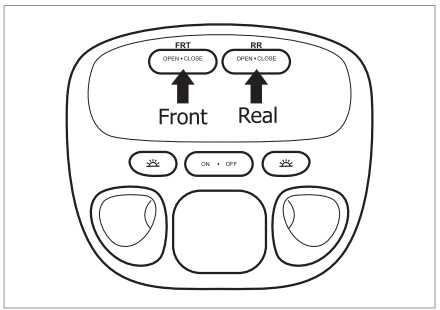
•Opening: Push the button on the direction shown by the arrow.

•Closing: Pull the center of the button towards yourself; lock the button to assure the safety when closing the window.



Clerestory (if Equipped)

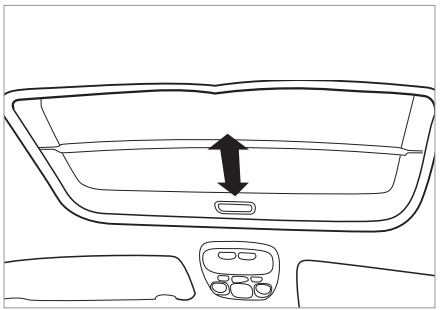
Manipulation of Electric Clerestory



The clerestory is controllable when the ignition switch is at “ON” position. The control switch can control the opening and closing of front and rear clerestories.

Press and hold the button in front of the canopy to open and close. Loose the button when the clerestory is opened to the ideal position. When opening the front clerestory, it will first stop at the half-opened position, then loose the button, and press again to totally open. The closing is the same as the above, the clerestory will remain at the half-closed position, then loose the button and press again to totally close.

Clerestory Sunroof



When the clerestory is closed, the sunroof can be opened and closed through sliding around. The sunroof can automatically open but must be manually closed when the clerestory is opened.

⚠ Notice

►Do not open the clerestory when it's very cold outside or there is snow and ice on the clerestory.

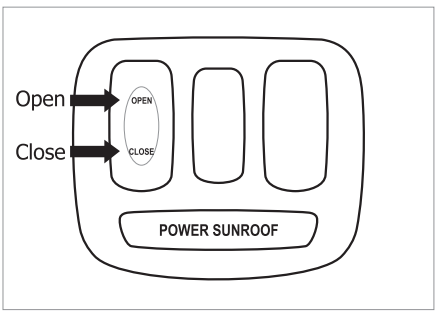
►Periodically clear the guide rail.

►Dry the water on the clerestory then operate after washing the car or after the rain.

►When the hand/arm or body is trapped between the sliding glass and window frame, and do not close the clerestory so as not to cause body injury.

►Do not stand outside of the window or make part of the body exposed out of the window in the driving.

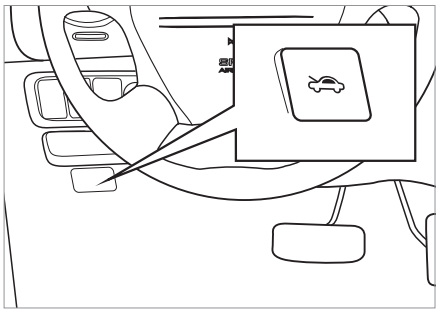
Rear Clerestory Switch



The rear clerestory can automatically open; press the button “OPEN” to open the clerestory, and loose the button when reaching the proper position. After closed, the clerestory will stop at the half-open position, at this time, loose the button and press again, and then the clerestory will be closed completely.

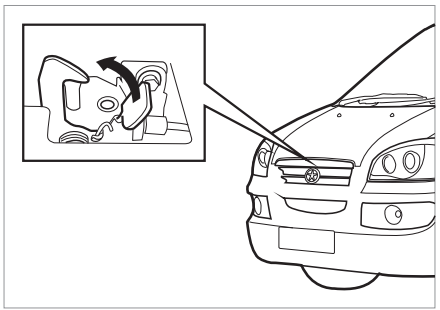
Engine Cabin Cover

Open the Engine Cover



1. Pull the bar upward to loosen the engine cover.
2. Press the safety bar inside the edge of the engine cover to raise the engine cover.
3. Support the engine cover with the knighthead.

Before closing the engine cover, withdraw the knighthead and slowly put down the engine cover, and let the engine cover fall automatically when it is 30cm away from the lock position. Ensure that the engine cover returns to the original position and is locked.



⚠ Warning

►Check twice to confirm that the engine cover has been locked before driving; otherwise, the engine cover may be opened to turn back the line of sight when the car is started and leads to an accident.

►Totally embed the knighthead into the buckle to prevent it from falling to hurt people whenever checking the engine.

►Do not start the car when the engine cover is raised, because the engine cover will turn back the line of sight and may fall or be damaged.

Engine Cabin Operation Safety Statement

All works performing on the engine or in the engine cabin, such as checking and filling drive liquid, may cause burning injury, accident and fire hazard.

⚠ Notice

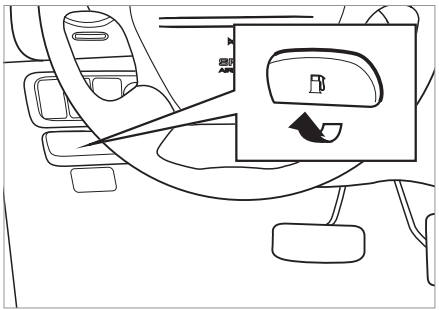
Be careful of all works on the engine or in the engine cabin.

►When you find that there is vapor or cooling liquid overflowing, never open the engine cabin cover because there is hazard of being burnt. Please wait till there is no vapor or cooling liquid overflowing and the engine is cooled, and then operate.

►Please pull the ignition key out after stopping the engine, and fasten the parking brake. The transmission is on empty shift or “P” shift.

Oil Filling Cap Bar

Distance Oil Filling Cap Opening



Pull the oil filing cap bar under the panel board on the left side of the car to open the oil filling cap.

⚠ Notice

►Make the child keep far away from the engine.

►Do not touch the cooling fan as long as the engine is in the operation and heating, because it may be suddenly started. Never open the seal cap of cooling liquid compensating cylinder, because the cooling system is still under pressure.

►Do not make the cooling liquid drop on the hot exhaust port or on other engine parts. The antifreeze in the cooling liquid will burn automatically.

►Avoid short-circuit of the electrical equipments, especially batteries.

►There is another hazard caused by rotating the component if the repair is made when the engine runs, such as: ribbed belt, power generator, cooling fan and high voltage ignition equipments.

►The repair under the situation in which the fuel oil system or the electric equipment works shall pay attention to:

-Cut off the battery and car electric system

-No smoking

-Do not work beside open fire.

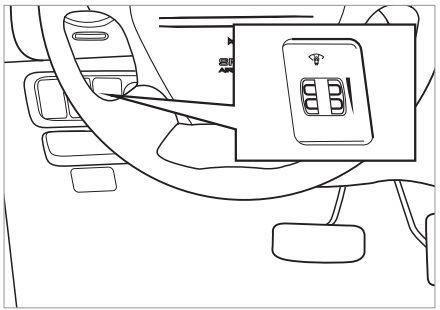
◆Never confuse the liquid when filling the liquid, otherwise there will be serious function defects.

❀ In order to timely find the unsealed seam, check the ground of the parking position. If there is oil spot or other drive liquid prints, drive the car to the special maintenance station of JAC Refine to examine.

⚠ Notice

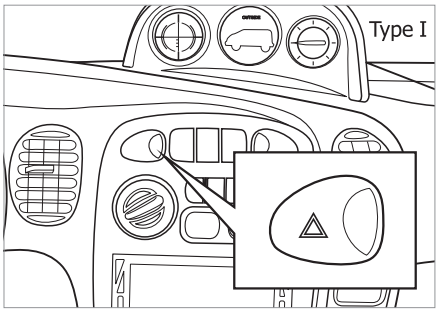
If the oil filling cap is hard to open because of being iced up, gently knock or push the cap to break the ice and open the cap. Do not prize the cap. Use recognized deicing agent (do not use the radiator anti-freezing liquid) to spray around the cap when necessary or drive the car to the warm place to melt the ice.

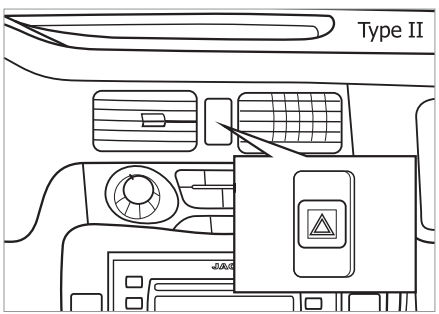
Panel Board Brightness Control Knob



Turn the panel board brightness control knob to brighten or darken the panel board light.

Hazard Warning Light





The equipment can response when the ignition switch is closed. Under the following situations, the hazard warning light can be turned on :

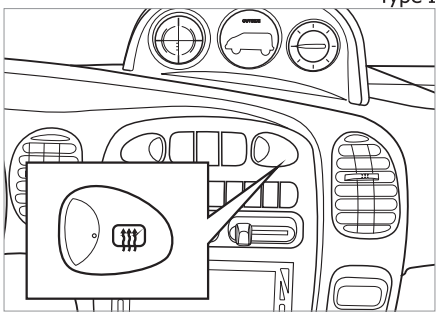
- When your car is in a traffic jam;
- When you have emergent situation;
- When your car anchors due to the technical failure.

⚠ Notice

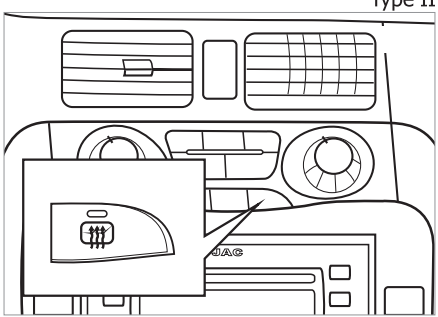
The continuous running time of hazard warning light shall not exceed one hour, otherwise, the battery will run out of capacity.

Rear Window Defroster (if Equipped)

Type I



Type II

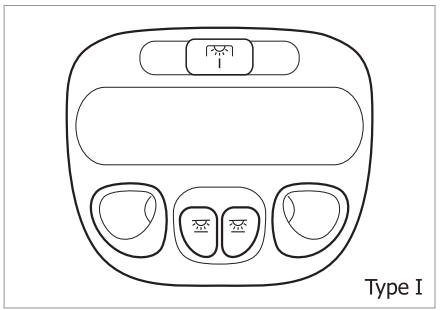


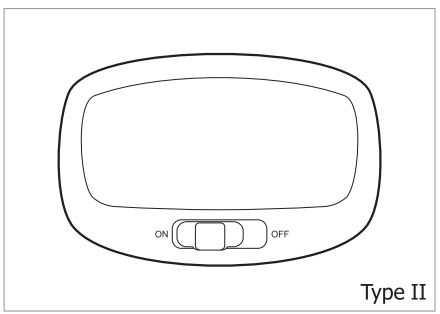
The heating device works only when the engine is started. When the heating device switches on, the indicator light on the switch will be on. The heating device will be automatically off after being connected for about 20 minutes. Gently touching the switch again can turn off the heating device in advance.

❀ Turn off the heating device as long as there is no influence of the rear window like frost. The reduction of power consumption is favorable for saving fuel oil, and an economic driving with environmental protection sense.

Inside Illumination

Front Ceiling Light





The front interior light button has three positions:

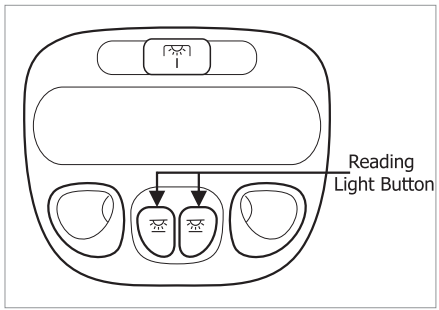
•DOOR-Under this mode, wherever the ignition key is, the light will be on if opening the car door, while the light will be off if closing the car door.

Note: If your car is equipped with delay interior light, the front interior light will be gradually off within 6s after the car door is closed.

•ON-The front interior light will be always on under “ON” mode.

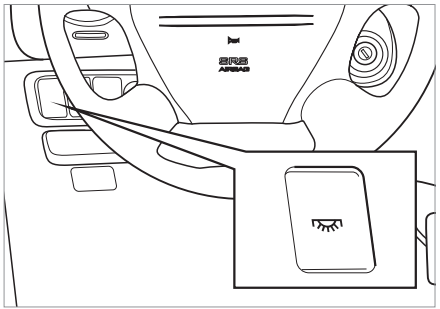
•OFF-The front interior light will not be on even though the car door is open under “OFF” mode.

Reading Light (if Equipped)



The switches of the two reading lights are on the overhead rack. Press the switches to turn on and turn off the reading lights. The reading lights will emit spot beam, which is convenient for the nighttime reading or as the personal light of drivers and passengers.

Ceiling Light (if Equipped)

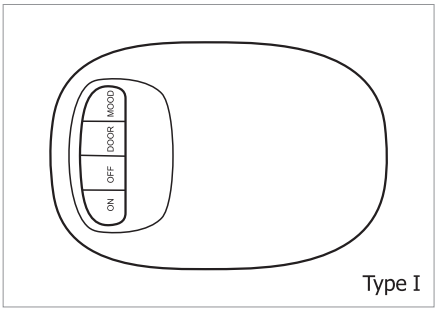


This switch is in the panel board area, which is convenient for the driver to turn off the ceiling light in the carriage.

Press the top switch and the switch indicator light will turn on; the carriage light circuit is switched on and the ON, DOOR and MOOD mode are freely chosen, and the rear carriage light is on.

When the ceiling light switch is reset, the indicator light is off, the carriage light circuit is cut off, the ON, DOOR, MOOD mode control are invalid and the rear carriage ceiling light will not be on.

Rear Ceiling Light



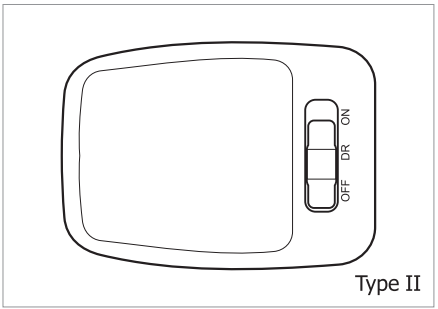
The light has four modes:

ON: The light is on and directly illuminates (white)

OFF: The light is off.

DOOR: The light is on when the sliding door and rear cabin door are open, and the light is off when the sliding door and rear cabin door are close.

MOOD: The light is on and the environmental lighting (orange)



The light has three modes:

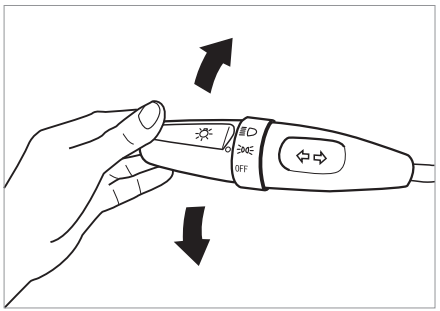
ON: The light is on and directly illuminates (white)

OFF: The light is off.

DOOR: The light is on when the sliding door and rear cabin door are open, and the light is off when the sliding door and rear cabin door are close.

Combined Switch

Directional Signal Light Switch

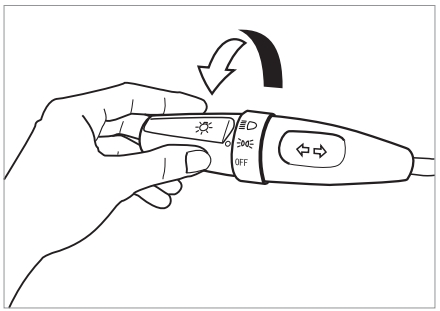


The directional signal light device works only when the ignition switch is on.

Push upward the control lever of turning light if the car needs to turn right; push downward the control lever of the turning light when need to turn left.

The directional signal light will be automatically off when the car is driven out of the corner and the steering wheel returns to center.

Headlight Switch



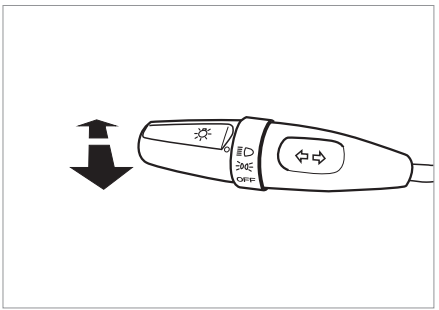
On

Rotate the column at the end of the multifunctional switch control lever to the first position, and turn on the small light, tail light, license plate light and panel board light. Turn on the head light at the second position.

Off

Rotate the multifunctional switch control lever to “OFF” position to turn off the head light.

High Beam Light Switch

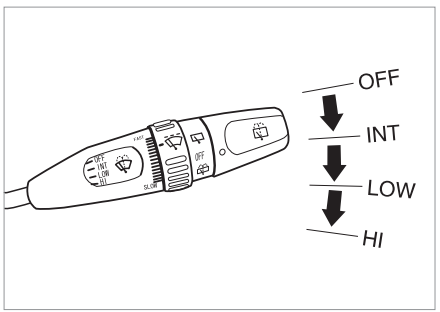


Push forward the control lever (in the direction away from yourself) to turn on the high beam light of head light, and the high beam light indicator light is also on when the high beam of head light is on. Pull the control lever towards yourself to turn on the low beam light of head light.

Headlight flash

Pull the switch towards yourself then loose to flash the headlight. The headlight can flash even though the headlight switch is at “OFF” position.

Wiper and Windshield Washing Device



When the ignition switch is at “ON” position, the windshield wiper or cleaner switch is controllable. The switch has the following positions:

1. OFF: Off

2. INT: Interval

When the switch is on “INT”, adjust the switch to control the swing interval of the wiper to be 1~18s.

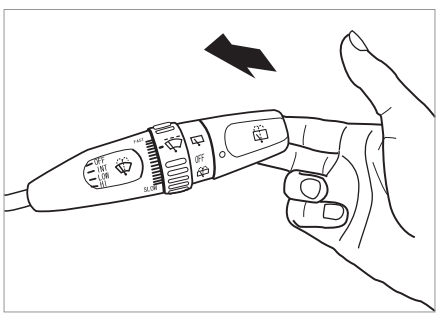
3. LOW: Low speed operation

4. HI: High speed operation

⚠ Notice

►In winter or the freezing weather, confirm whether the wiper blade is frozen on the glass before using the wiper.

Operation of Windshield Cleaner



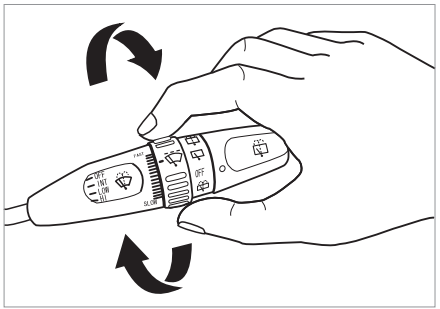
Pull the control lever of wiper/cleaner towards yourself for using the windshield glass cleaner. When the cleaner is turned on, the water from the sprayer will be divided into two routes to clean the windshield. The sprayer will work at the same time, and stop when loosening the control lever.

⚠ Notice

►The working time of sprayer for each time shall not be over 15s. Do not operate the cleaner when there is no cleaning liquid in the sprayer.

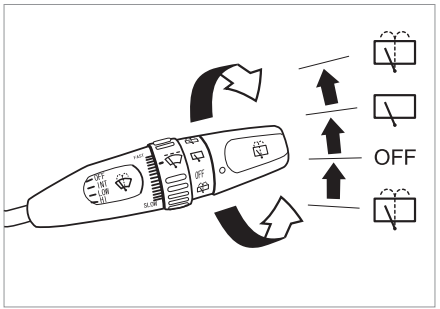
►Use the anti-freezing windshield cleaning liquid in the area where is easy to cause freeze in winter.

Wiper Interval Operation



The wiper can run at intervals when the wiper switch is at “INT” position. Rotate the interval regulating button when the wiper switch is at the position, and the interval will change within 1-18s.

Rear Door Wiper and Cleaner



Rotate the column at the end of the control lever to control the rear window wiper.

1. : Inching, spray the cleaning liquid, but the hand is required to hold the position.

2.OFF: Position of idling status, auto hold position.

3. : Rear wiper works without spraying the cleaning liquid.

4. : Inching, spray the cleaning liquid, but the hand is required to hold the position.

The operation of sprayer for each time shall not be over 15s, and do not operate when there is no cleaning liquid in the spray, or the system will be destroyed.

⚠ Notice

►Check whether the blade is frozen on the windshield when operating the wiper under low temperature; otherwise, the motor will badly burnt.

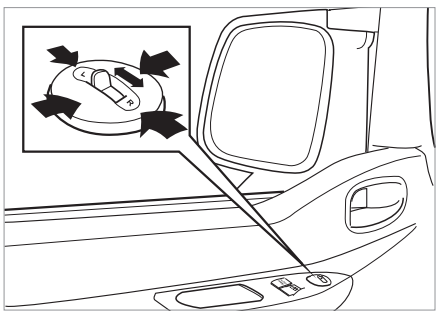
►The ice or other barrier on the glass causes the wiper to stop during working, which may cause the wiper motor to be burnt. Immediately stop the car and turn off the ignition switch if this phenomenon occurs, and clean the windshield to make the wiper freely work.

►Do not use the wiper if the surface of the windshield is dry, or the glass will be scratched and the blade will be worn out.

Rearview Mirror

Properly adjust the rearview mirror before driving, and make the drive always have good rearview.

Electric Regulating Exterior Rearview Mirror



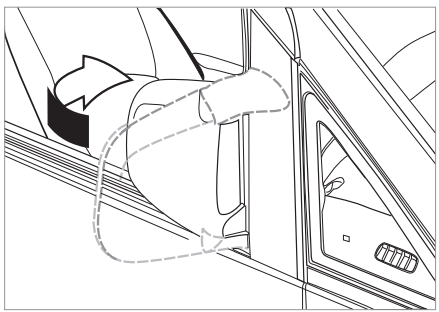
The rearview mirror can be adjusted in all directions within ± 7° range to obtain the maximum rearview. The remote control on the rearview mirror switch can adjust the left and right rearview mirrors.

Adjust the position of rearview mirror:

1. Adjust the switch to “R” or “L” position to activate the car door view mirror regulating mechanism.

2. As the picture shows, press the lower part to the proper orientation to the switch to adjust the mirror degree.

Folded Exterior Rearview Mirror



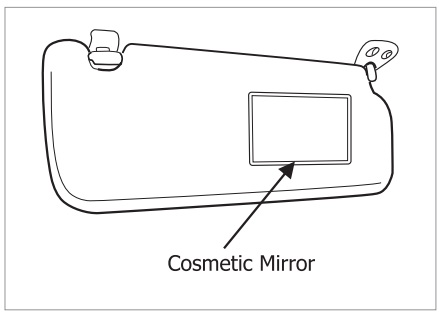
Push the rearview mirror to the inside to fold. We suggest you fold the exterior rearview mirror if parking in the narrow place.

⚠ Notice

Remember that do not put the fingers between the rearview mirror and mirror leg when folding the rearview mirror so as to prevent from the hazard of crushing injury!

Sun Shield

Front Seat Sun Shield with Cosmetic Mirror (if Equipped)



Your car is equipped with two sun shield to meet the demand of the drivers and passengers in the front row to shelter from the strong light in the front and on the side Pull down the sun shields to reduce the sunlight or direct radiation. The cosmetic mirror is on the back of the sun shield.

⚠ Notice

Please read the use instruction of auxiliary safety system SRS attached to the back of each sun shield.

Front-Row Seat

⚠ Warning

Never try to adjust the seat when vehicle is running, and otherwise it may lead to unexpected accident, injury or death of passengers, and other serious aftermath.

Adjustment of Forward and Backward Positions of Seat

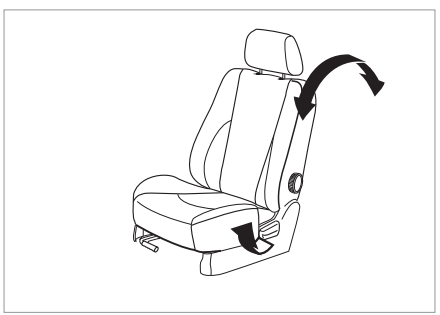


Pulling upward the regulating rod can adjust the forward and backward of the seat. Release the adjusting rod when the seat has moved to the required position after forward or backward movement on the rail. Allow the seat for a forward and backward slide along the rail, till it slides into the locked position and can no more move.

⚠ Notice

Determine whether or not the seat is firmly locked up, and it is allowed to try forward or backward movement of seat under the condition when lock adjusting rod is not used, for determination.

Adjustment of Inclination Amountof Seat



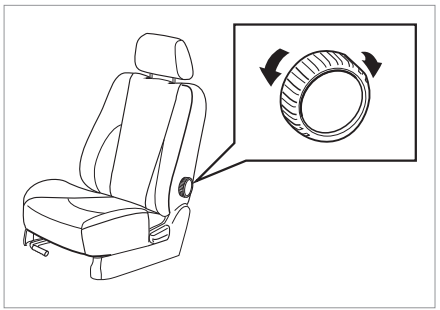
Lean forward the human body while adjusting the amount of inclination of the seat backrest to reduce the weight. Pull up the adjusting rod for inclination on the outer edge of the seat, and then lean backward till the satisfactory angle of the backrest has been gained. Release the adjusting rod to lock up the position of the backrest.

⚠ Warning

To minimize injury caused to people during bump or parking, the backrests for driver and passengers shall maintain in a upright position when vehicle is running, while the backrests are inclined, the protection provided by safety belt and safety airbag will be greatly reduced. When collision occurs, if the backrests are under the inclined condition, driver and passengers may slide to the Underpart of safety belt, and it is to say that the safety belt cannot provide omnidirectional protection when backrest is inclined.

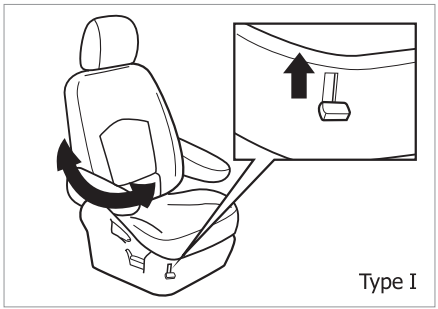
2nd-Row Seat

Waist Support Contro (Only for Driver Seat)



Turn the knob forward to increase waist support, while turn the knob backward to reduce waist support.

Rotation of 2nd-Row Seat



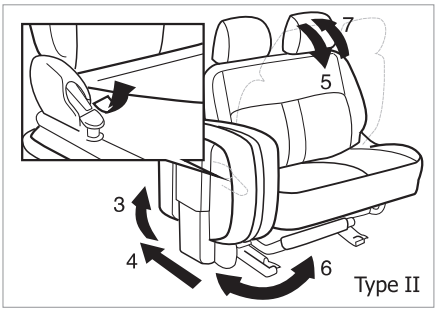
Pull the adjusting rod clockwise to rotate the seat.

⚠ Warning

►Make sure not to rotate the seat when vehicle is running.

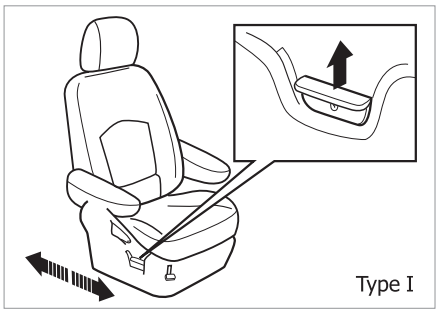
►Make sure to confirm that the seat has been safely locked up on certain position, when adjustment for seat rotation has been fulfilled.

►Make sure to confirm that the seat has locked up from forward movement, and otherwise, it may lead to serious injury during a sudden stop.

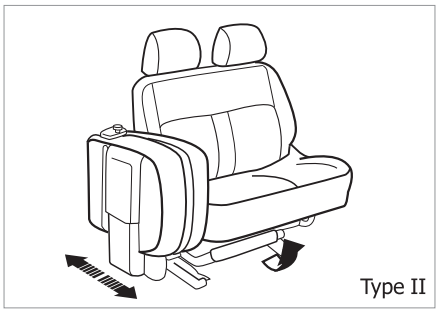


1. Prior to rotating adjustment of 2nd row of seats, make sure to position the front row of driving seats and the rear three rows of seats.
2. Keep the front row of seats backrest forwards.
3. Fold auxiliary seats.
4. Tie adjusting rod and slide seats towards the backmost end.
5. Tie adjusting rod and lean forwards backrest.
6. Clockwise rotate the seats.
7. Position after rotating the seats 90º or 180º.
8. Adjust seat backrests or seats to the proper point.
9. You may adjust the seats to their original positions through reversing the above procedures.

Adjustment of Forward and Backward Positions of Seat

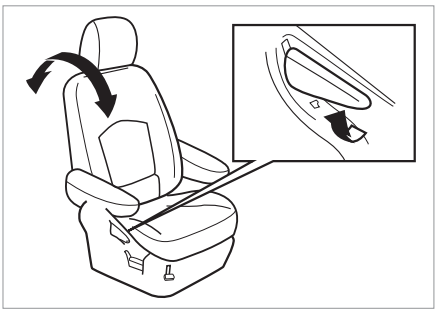


Pulling upward the adjusting rod can adjust the forward or backward position of seat. Release the adjusting rod when seat has moved to the required position through forward and backward movement on the rail. Allow seat for a forward and backward slide along the rail, till it slides into the locked position and can no more move.



Pull forward and keep the adjusting rod, and slide the seat to its proper position back and forth, then release the adjusting rod, and lock the seat.

Adjustment of Inclination Amount for the Seat Backrest

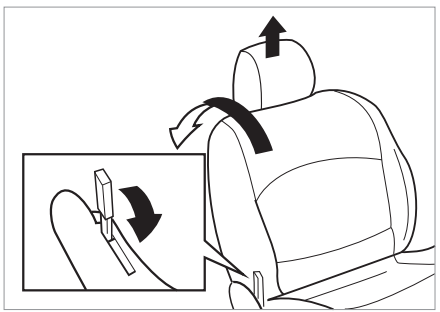


Lean forward human body while adjusting the inclination amount of the backrest to reduce weight. Pull up the adjusting rod for inclination on the outer edge of the seat, and then lean backward till the satisfactory angle is gained. Release the adjusting rod and lock up the position of the backrest.

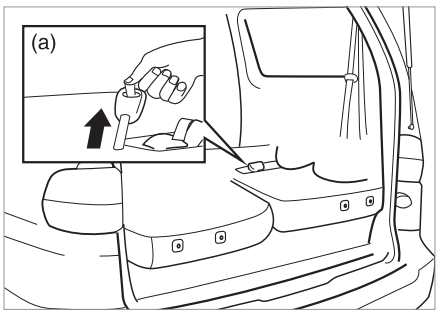
3rd-Row Seat

Folding of 3rd-Row Seat

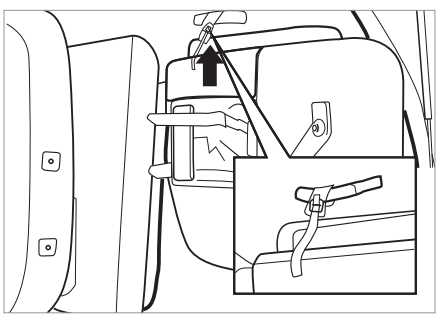
After the 3rd-row seat is folded, large articles can be placed inside the vehicle. Please operate according to the following procedure:



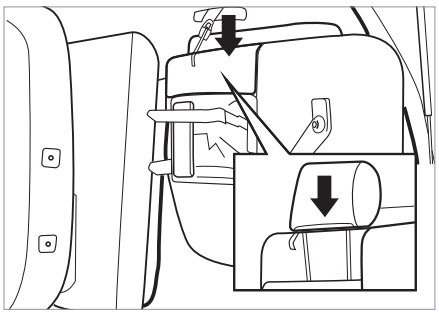
1. Move away the headrest, and adjust the backrest till it is inclined to the maximum angle.



2. Pull the stay cord (a), loosen the seat latch hook to raise the position, and fold the seat in side direction.



3. Hang the seat latch onto the auxiliary handle, and fold the seat legs.



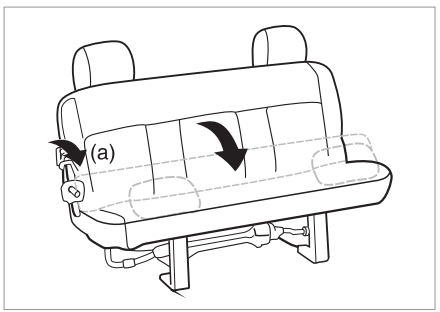
4. Fix the headrest on the upper part of the seat legs.

5. Operate in reverse order if it is required for seat to be recovered to normal position.

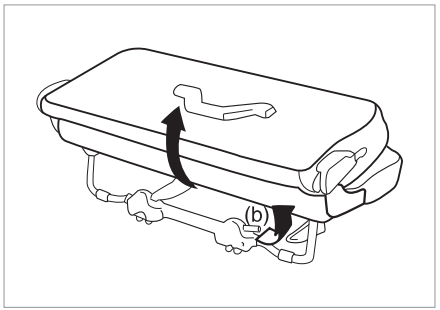
4th-Row Seat (if Equipped)

Folding of 4th-Row Seat

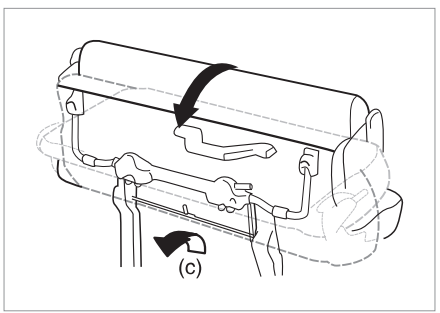
The 4th-row seat backrest can be folded downwards as per figure, to provide a fairly large storage space for goods.



1. Push forward the adjusting rod (a), and fold forward the seat backrest.



2. Disengage the ground locking device, for the adjusting rod (b).



3. Pull the adjusting rod along (c) direction, loosen the lock catch, and lock up the seat on the floor. Push forward the adjusting rod (a) for seat to be upright, and allow the seat to return to its original position.

⚠ Notice

When seat is being recovered to normal position, extend the length of the seat legs. Loosen the seat latch and lower the seat slowly.

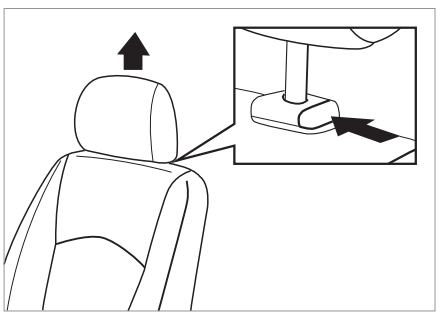
⚠ Warning

Take care not to allow the seat to fall, to avoid press on hand or foot.

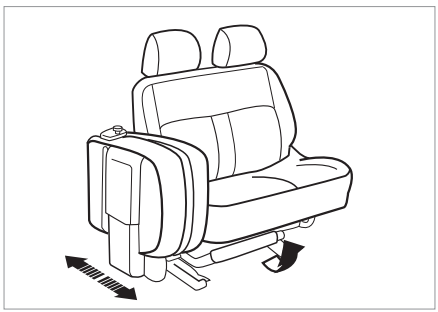
Set Level the Seats

Please operate as follows if a large flat seat is required:

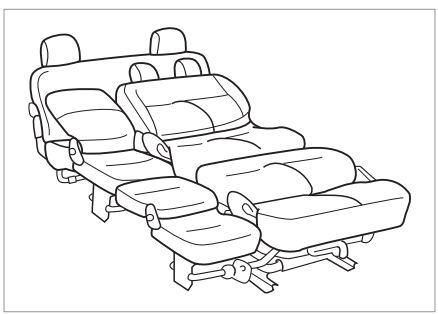
1. Move away headrest.



2. Position the front/rear row of seats.



3. Set level backrest and then obtain a comfortable seat.



⚠ Warning

►Please park your car in a safe place, and then adjust and set level the seats.

►Do not stand or walk on the seats after setting level them.

►To ensure seat safety, try to move the seat back and forth.

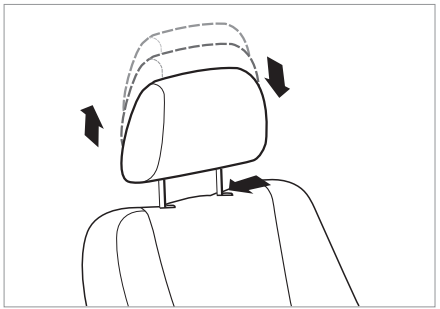
►Do not jump on backrest or press it.

►When luggage or passenger exists on the set level seats, do not start the car, otherwise there may be danger in case of sudden brake.

►If it is necessary to raise the backrest, please raise it with your hands on the seat, Never have a child conduct this operation so as to avoid accidents.

Headrest

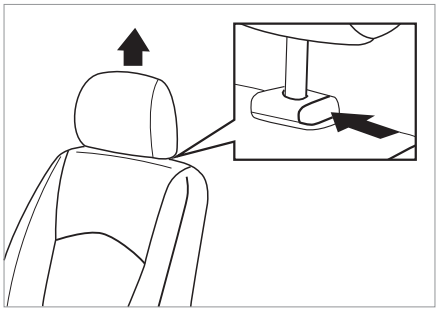
Height Adjustment



Height of headrest is adjustable, and shall be adjusted accordingly based on the stature. Headrest that have been correctly adjusted and the safety belt will provide effective protection together with each other.

- Pull upward to raise the position of headrest, while press downward to lower the position of headrest, and at the same time, press the locking button according to the direction as indicated by the arrow.
- It will achieve the best protective effect when the upper edge of headrest is flush with the height of eyes or higher than the eyes.

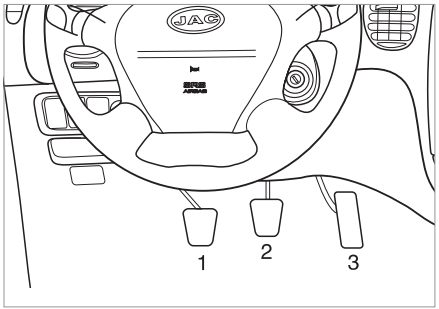
Disassembly and Installation



- If headrest is to be disassembled, pull the headrest to the uppermost shift position, press down the button (as indicated by the arrow), and at the same time pull out the headrest.
- The rear-row headrest can only be pulled out when you have turned over the backrest forward through certain effort.
- Insert the bayonet of headrest as much possible into the conduit, until the sound of positioning bite is heard, for re-assembly the headrest.

Running Pedal

Brake, Clutch and Accelerator Pedal



Respective operating pedals inside the driving cab are indicated as in the figure:

1. Clutch pedal
2. Brake pedal
3. Accelerator pedal

Operation of pedals shall not be obstructed!

- Hence, it is not allowed to place any articles that may possibly slide into under the pedals in the space of leg rest and neither allowed for any foot pad that has no anti-slip function or liable for curling up, or carpet that may cause slippery within the scope of the pedals.

•The stroke of pedals may possibly be increased during failure of braking device.

•The pedals of clutch and accelerator must always be able to be fully treaded.

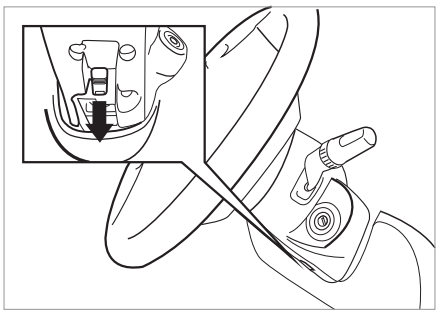
•All the pedals must be able to return to their original positions without obstruction. Therefore, only foot pads with anti-slip function and with empty slots left out in the pedal areas can be used.

⚠ Warning

The space for leg rest shall not be present with any other objects absolutely, as during emergent accident or braking action, such object may possibly be immixed into the device of brake pedal, and in that case you may no more be able to perform braking, clutching or accelerating operations.

Adjustable Steering Column

Adjustment of Position and Height for Steering Wheel



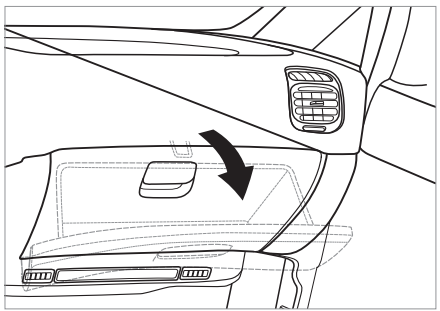
1. Push downward the adjusting rod until released position.
2. Raise or lower steering wheel to a satisfactory position.
3. Pull upward the adjusting rod, and lock up the steering wheel.

⚠ Warning

Never adjust steering wheel during running, and otherwise it may lead to out of control over the vehicle, and may possibly cause grievous injury and even death.

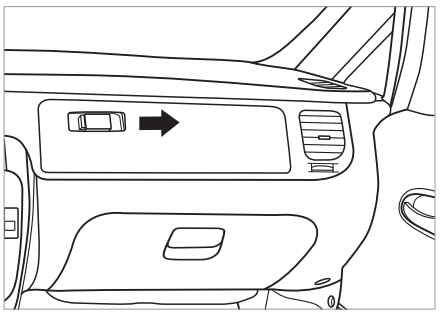
Storage Box

Large Storage Box for Co-Driver Seat



This storage box is located on the lower part of the instrument panel on the side of co-driver.

Small Storage Box for Co-Driver Seat (if Equipped)

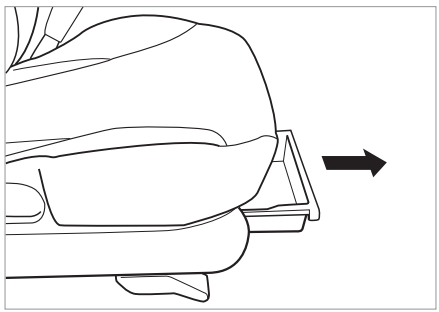


This storage box is located on the instrument panel on one side of the driver seat, and you may open it by pressing the switch on the board.

⚠ Notice

Do not place any article on the panel, these articles may be thrown into the car in the course of travelling (acceleration or turning).

Storage Box on the Lower Part of Driver Seat (if Equipped)



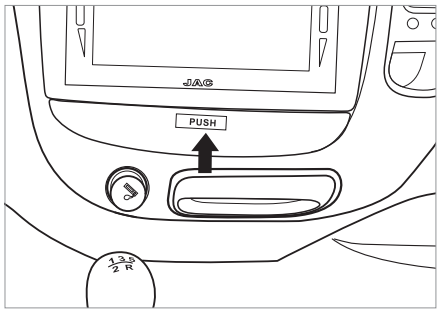
This storage box is located on the lower part of the driver seat, and pull it out in forward direction when it is to be used.

⚠ Warning

The storage box shall be closed up during running, to avoid injury at the time of accident or emergency brake.

Beverage Cup Holders

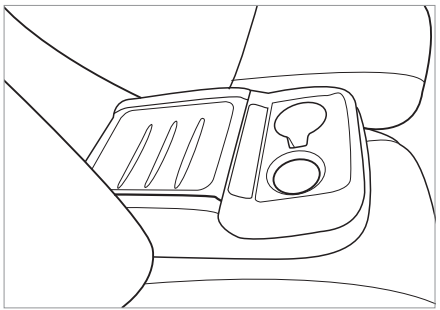
Type I (if Equipped)



This holder is located on front center instrument panel, is used for front-row passengers to place beverage cup, and can be pulled out by pressing the board.

Ashtray

Type II (if Equipped)

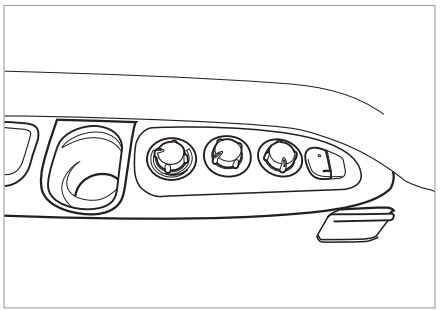


This holder is located on the rear part of foldable seat between driver's seat and co-driver's seat, and is used for front-row passengers to place beverage cup. Push foldable seat and set level the seat back if needed.

⚠ Notice

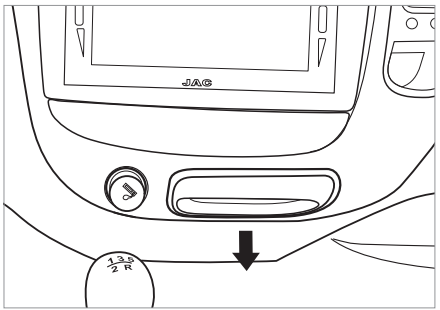
It is now allowed to place hot beverages (such as hot coffee or tea) into the beverage cup holders, as under contingency condition or during the action of emergency brake, it may spill and cause scald.

Cup Holder for Rear Carriage



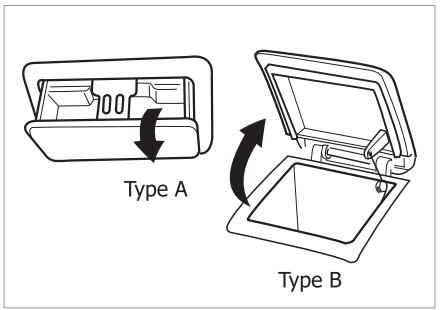
Cup holder is also fitted on the inner plaque on the inner side of rear carriage, and beverage cup can be directly placed into the dent of the cup holder during use.

Front Ashtray



Pull out the box of ashtray to open it. Pull it out and take it off when it is to be cleaned.

Rear Ashtray (if Equipped)

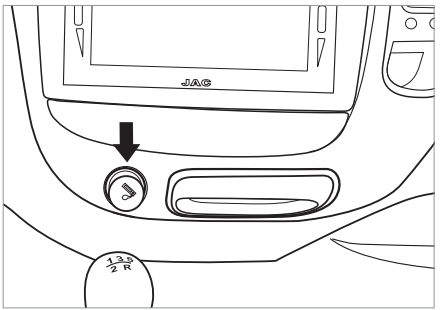


Type A: Pull downwards the ashtray to open it. Pull it out and take it off for cleaning.

Type B: Open the cover to use the ashtray. Remove it by holding the cover and raise it upward for cleaning.

Cigarette Lighter

Use of Cigarette Lighter



Push the button of cigarette lighter. The button will eject when heating coil turns red. Take off the lighter immediately and light up your cigarette on the heated coil.

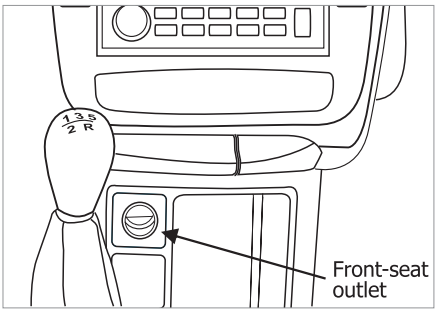
⚠ Warning

►Take care when using the cigarette lighter! Any carelessness of uncontrolled use may possibly cause burning.

►The lighter and the outlet can also be used when igniting switch is turned off or igniting key is pulled out. Therefore, it is absolutely not allowed to leave children inside the vehicle without care.

Electric Outlet

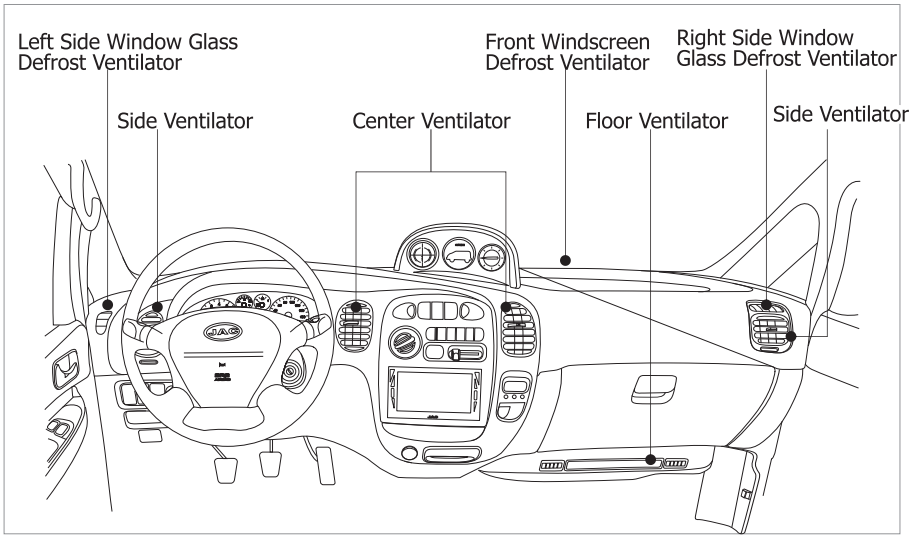
DC Outlet for Front Seats (if Equipped)



12V socket locates on right side of luggage compartment marked with “POWEROUTLET”, and can be used for electrical accessories with maximum power up to 120W. Power supply will be finished through on-board battery when the car stops.

Air-conditioning System

Layout of Air Conditioner Ventilators (Type I)



Center Ventilator

Center ventilator is installed on the center position of instrument panel. The airflow direction from the center ventilator can be changed.

Side Ventilators

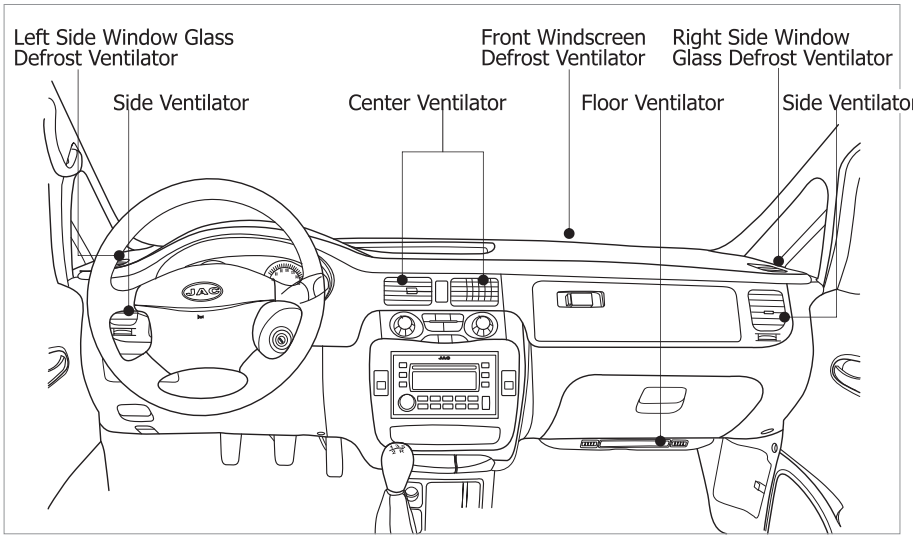
Side ventilators are on the two sides of instrument panel, able for up and down or left and right movement of the deflector rod in the ventilator to adjust the airflow direction.

The adjusting buttons of the side ventilators can open and close these exhaust ports for control over air entry.

⚠ Notice

Exhaust ports shall be maintainer unobstructed and free from barriers.

Layout of Air Conditioner Ventilators (Type II)



Center Ventilator

Center ventilator is installed on the center position of instrument panel. The airflow direction from the center ventilator can be changed.

Side Ventilators

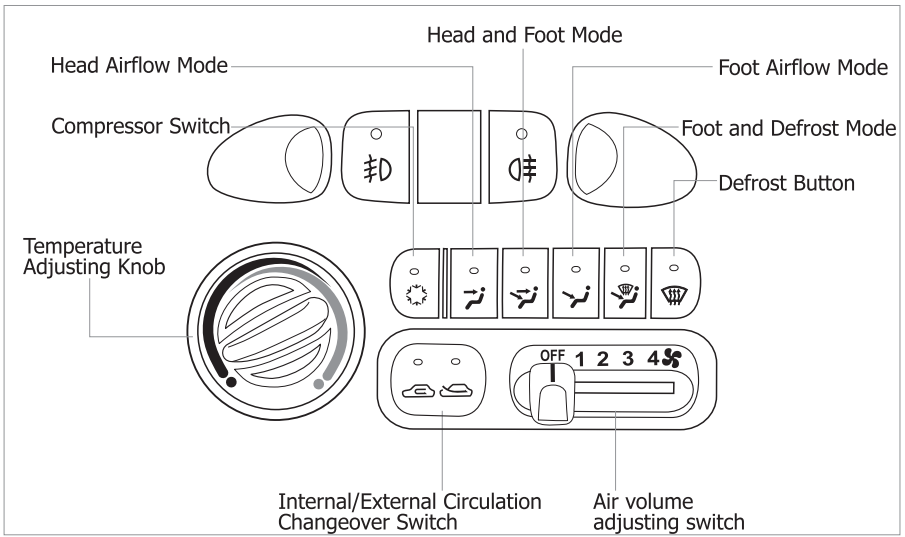
Side ventilators are on the two sides of instrument panel, able for up and down or left and right movement of the deflector rod in the ventilator to adjust the airflow direction.

The adjusting buttons of the side ventilators can open and close these exhaust ports for control over air entry.

⚠ Notice

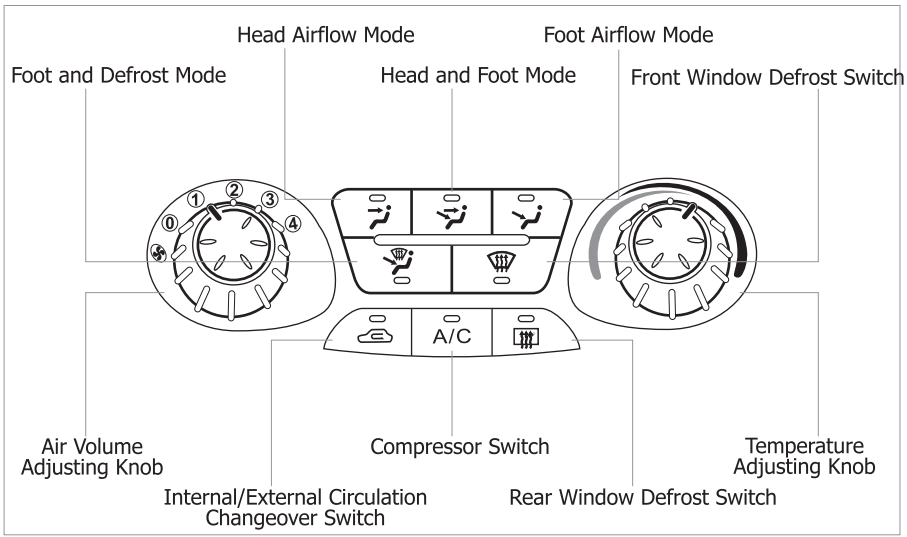
Exhaust ports shall be maintainer unobstructed and free from barriers.

Manual Air-conditioner Control Panel (Type I)



Air conditioning system installed on JAC Refine vehicle can offer you a comfortable driving environment under any weather conditions. Your correct use of this system can guarantee the dryness and comfortableness inside the car, as well as the best visibility. The button layout on the panel may be different from difference vehicle types, so you should carefully read this manual to understand various functions of air conditioner.

Manual Air-conditioner Control Panel (Type II)



Button Functions

A/C-Compressor Switch

Control the opening and closing of compressor.

LED indicator on the button will turn on when the compressor is started, and otherwise, will turn off.

Circulation Changeover Switch

Such switch can control the circulation mode, “internal circulation” is enabled after first press, and “external circulation” is enabled after second press.

Type I switch: LED indicator will turn on when “internal/external circulation” is enabled.

Type II switch: LED indicator will turn on when “internal circulation” is enabled; and LED indicator will turn off when “external circulation” is enabled.

Temperature Adjusting Knob

You are allowed to maintain an ideal and comfortable temperature in your car through rightwards/leftwards rotating the knob. Air conditioner temperature can be controlled between 17℃ and 32℃.

The blue part on the knob indicates cooling, and the red part indicates heating.

Air Volume Adjusting Switch

Such switch can adjust blow fan speed from Shift 1 to Shift 4.

The compressor stops when fan switch is closed.

Type I switch: the fan stops when the switch locates at “OFF” position.

Type II switch: the fan stops when the knob locates at “0” position.

Mode Selection Button

Five airflow modes for Refine manual air conditioner are available to you. After you select a mode, the corresponding LED indicator will turn on.

Head and Foot Mode

Under such mode, the air flows from center instrument panel ventilator and floor ventilator respectively.

Head Mode

Under such mode, he air flows from center instrument panel ventilator and ventilators on both sides respectively.

Foot Mode

Under such mode, the air flows from floor ventilator.

Foot Defrost Mode

Under such mode, the air flows from front windscreen defrost ventilator, right/left side window glass defrost ventilator and floor ventilator respectively.

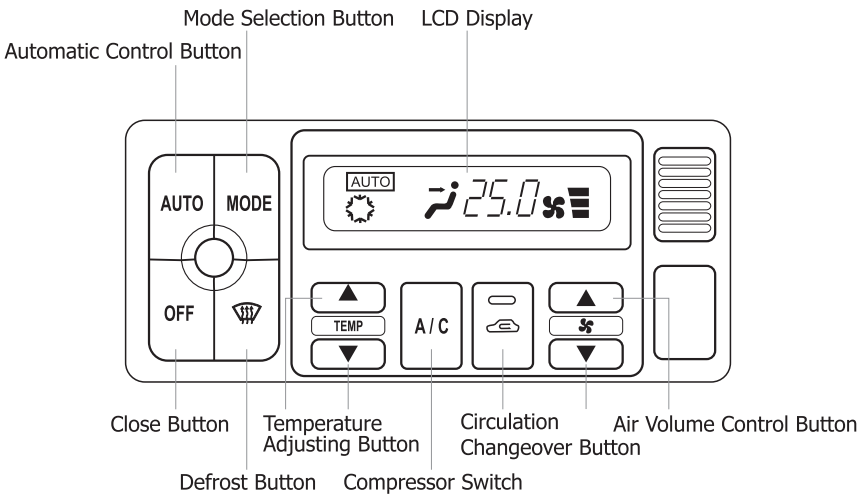
Defrost Mode

Under such mode, the air flows from front windscreen defrost ventilator, right/left side window glass defrost ventilator.

Main Points for Operation

- When you have just entered the vehicle, and feel it is very hot, please open the windows to emit the heat.
- Please close the windows when air conditioner is used, to avoid the entry of external air.
- In case of serious air pollution outside, please enable “internal circulation” mode so as to prevent dirt or fume from entering the car; after the pollution reduces, please resume "external circulation" mode to let in fresh air.
- When air conditioner is enabled, you may temporarily select “internal circulation” mode to accelerate the cooling if you expect cooler airflow.
- Please shift to low speed when you are forced into low-speed driving due to the traffic jam, which will raise the engine speed and thus will raise the compressor speed.
- Do not close the air conditioner so as to avoid the overheating of engine in case of long-time driving.
- In winter or during time periods when air conditioner is not often used, please turn on the air conditioner for several minutes at the intervals, to facilitate circulation of lubricant and to maintain the system under the optimal working status.

Automatic Air-Conditioner Control Panel (if Equipped)



Automatic air conditioner is a full automatic air-conditioning device, based on traditional air conditioner, to make use of various inducers to correctly perceive outdoor temperature, sunlight amount, evaporator air-outlet temperature, and water temperature for core of heater unit, as well as the in-vehicle temperature, and then to consolidate and enter these data into computer, for controller to automatically switch out wind rate, on/off of compressor, and air entry.

Button functions

OFF-closing button

1.LCD display closes.

2.Blower fan stops.

3.Stop front/rear system (compressor, condenser and fan).

4.When stop switch is enabled under automatic mode, air volume at outlet resumes the default status (the current status is stored when stopping under manual mode).

5.Automatically control temperature throttling box according to the given temperature before closing.

6. Air suction opening is fixed within internal circulation mode.

AUTO - Automatic Air Conditioner Button

1.Ventilation modes switch over such modes as head, foot as well as head and foot after your press on the button.

2.Automatically switch the position of temperature throttling box.

3.Automatically switch the inlet's internal/external circulation mode.

4.Automatically adjust blow fan's speed.

5.Automatically open or close the fan of compressor condenser.

A/C Manual Air Conditioner Switch

Control the compressor startup or shutdown (but the compressor stops when blower stops).



Airflow Circulation Changeover Button

1. Such switch can control the airflow circulation mode, “internal circulation” is enabled after first press, and “external circulation” is enabled after second press.

2. LED indicator will turn on when “internal circulation” is enabled.

3. LED indicator will turn off when “external circulation” is enabled.

MODE - Mode Selection Button

You may press the button to switch over ventilation modes: head → head and foot → foot → defrost.



Defrost Button

1. Switch to defrost mode after your press on the button.

2. Switch airflow control to external circulation mode.

3. Start the compressor mandatorily.



Air Volume Adjusting Switch

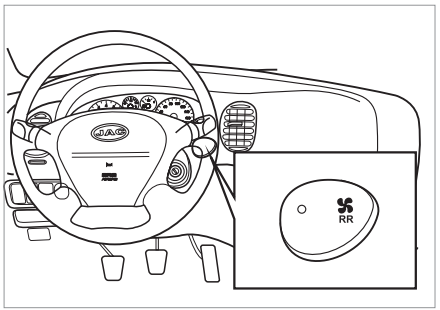
1. You may adjust blow fan speed ranging from Shift 1 to Shift 8 with the help of this switch.

2. The compressor stops when the fan switch is closed.

TEMP - Temperature Adjusting Button

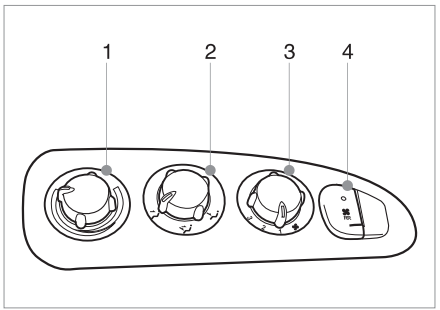
You may adjust the temperature ranging from 17℃ to 32℃ through pressing the button. The minimum unit for each adjustment is 0.5℃.

Postposition Air-Conditioning System (if Equipped)



The switch of post-positioned air-conditioning system is located on the central console of the instrument panel. The ignition witch is pushed down at the position "ON", then LED indicator lamp will turn on, and the post-positioned air conditioner will start, while the LED light will turn off and the air conditioner will shut down if the switch is pushed again.

Control Panel



1. Temperature Adjusting Knob

Turning the knob leftward or rightward to select the satisfactory temperature. Red color represents heating, while blue color indicates cooling.

2. Mode Selecting Knob

Three modes are available for airflow control, with three symbols representing head part, foot part, as well as head part and foot part modes, respectively.

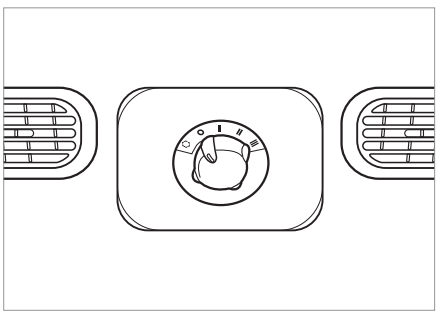
3. Wind Rate Control Knob

When igniting key and main switch are located on “ON” position, the knob can be turned to adjust the speed of blower fan on three shift positions. The speed of blower fan is increased when the switch is moved to the right side.

4. Rear blower switch

The switch can be used to open or close the rear blower.

Prepositioned Air-Conditioning System (if Equipped)



The air outlet and adjusting knob for prepositioned air-conditioning system are located on the top of vehicle. When the igniting switch is located on “ON” position, the main switch on the instrument console will start the prepositioned air conditioner.

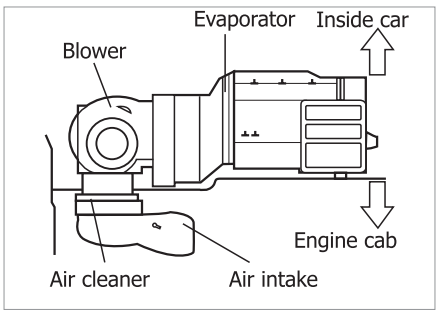
Wind Rate Control Knob

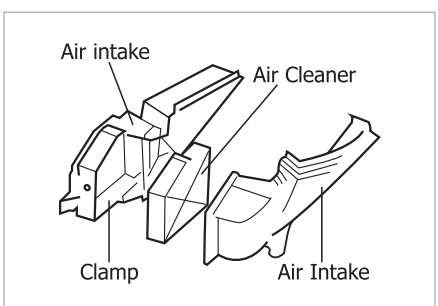
Prepositioned air conditioner is set with adjusting knob for three shifts of wind rate. When the knob is turned to “O” position, the air conditioner will not work. The conditioner will be opened when the knob is turned in right direction, at a smaller air outlet wind rate at “I” and the maximum wind rate at the shift of “III”.

Main Points for Operation

- When you have just entered the vehicle, and feel it is very hot, please open the windows to emit the heat.
- Please close the windows when air conditioner is used, to avoid the entry of external air.
- Please change to under-drive when you have to slow down during a crowded traffic. Please turn off the cir conditioner for a while after the vehicle has been driven for a period of time during long-time running, thus to avoid engine overheating.
- In winter or during time periods when air conditioner is not often used, please turn on the air conditioner for several minutes at the intervals, to facilitate circulation of lubricant and to maintain the system under the optimal working status.

Air Cleaner





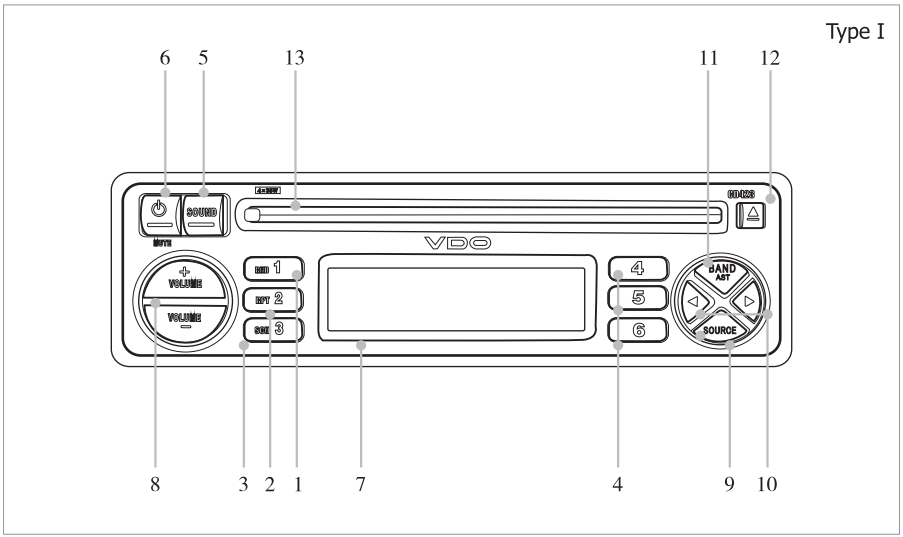
Air cleaner is installed inside the air inlet pipe, located behind the washing liquid tank of the front windshield glass. This device is able to reduce contaminants that enters inside the vehicle, and also able to purify air inside the car.

⚠ Notice

►Air cleaner must be replaced at an interval of one year or every drive of 20,000km. The air cleaner must be frequently checked if vehicle runs under the dusty, rugged and other extremity environments.

►In case that the airflow inside the vehicle is suddenly reduced, the vehicle must be checked at the special sale service shop of JAC Refine.

Acoustic System



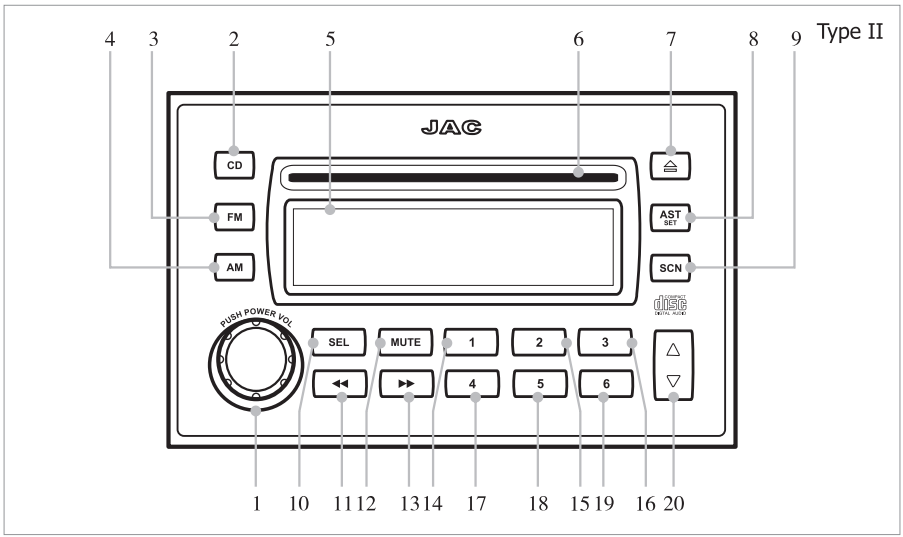
1.Preset button l
RND：CD random play, close/open
2.Preset button 2
RPT：CD repeated play, close/open
3.Preset button 3
SCN：CD song scanning
4.Preset button s 4, 5, 6
5.SOUND button: sound effect mode/sound effect
6.Power switch/MUTE button
Short-time press: power on;
Long-time press: power off
Short-time press: mute on/off
7.Display
8.Volume button: adjust the volume by pressing "+" or "—"
9.SOURCE button: select sound source

Refer to operation instructions for self-contained sound system for more details.

10.◄► button
Tune mode
Short-time press: manua upward/downward search
Long-time press: automatic upward/downward search

CD play mode
Short-time press: previous song/next song
Long-time press: fast forward, skip backward

11.BAND/AST button
Short-time press:wave band selection;
Long-time press: automatic storage
12. Disc-out button
13. Disc cabin



1. Power switch/volume button
PWR: switch sound (open by short-time press / close by long-time press)
VOL: volume up by clockwise rotation, and volume down by counterclockwise rotation
2. CD button
Sound source is transferred to CD disc for play.
3. FM button
Sound source is transferred to CD radio.
4. AM button
Sound source is transferred to AM radio.
5. LCD display
6. Disc cabin
7. Disc-out button
8.AST/SET button:
AST: automatic storage; SET: enter the setting by pressing equal to or above two minutes.
9. SCAN button
Radio frequency scanning / CD song scanning
10. SEL button
Selection of sound effect
11.◄◄ button
Low-end frequency scanning (radio mode)
skip backward (CD model)

Refer to operation instructions for self-contained sound system for more details.

12.Mute button
Mute for sound system
13.►►button
High-end frequency scanning (radio model)
fast forward (CD mode)

14.Preset button 1
RANDOM:CD random play, close/open
15.Preset button 2
16.Preset button 3
RPT：CD repeated play, open/close

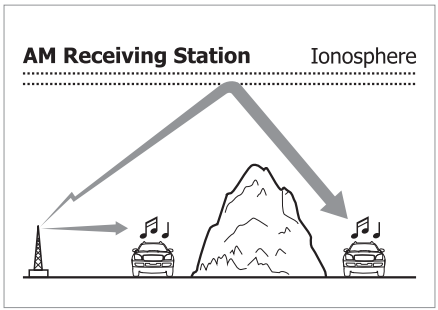
17.18.19: Preset button s 4, 5, 6
20.◄► button
Tune mode
Short-time press: manual upward/downward search
Long-time press: automatic upward/downward search

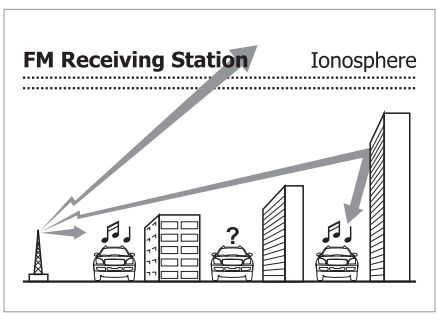
How Does the Radio of Vehicle Work?

AM and FM radio signal is sent out from the local launching tower and received through antenna on the vehicle. Radio receiver receives this signal and transmits it to the loudspeaker in the vehicle.

When a strong radio signal reaches your vehicle, the receiving quality of your audio system will be the best. However under some circumstances, the signal is not strong when it reaches the vehicle. This is caused by many factors, such as a too far distance from the launching station, close to tall and large buildings, bridges, and other obstructs, etc.

During long-distance reception, it is easier for AM broadcasting program to be received than FM broadcasting program. This is because that AM electric wave is transmitted through low frequency. Low-frequency electric wave can be reflected and transmitted through ionosphere in the atmosphere, thus the electric wave can wind off obstructs.





Use of Mobile Phone or Wireless Communication Equipment

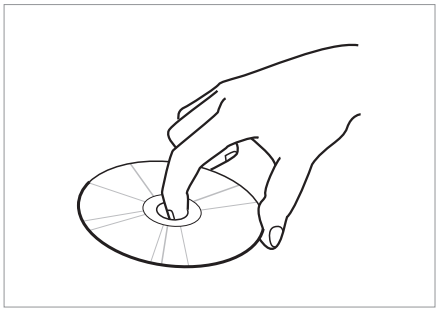
When multi-path network mobile phone is used inside the vehicle, noise may be generated with audio device. This does not represent a failure with acoustic system. Please use mobile phone as much as possible in a place far away from the acoustic system.

When multi-path network mobile phone or wireless communication equipment is used inside the vehicle, the vehicle must be fitted with external antenna. Receiving signals of mobile phone of wireless device may possibly interfere into the electronic system of the vehicle and affect driving safety.

⚠ Warning

Never use mobile phone during ride. The vehicle shall be parked in a safe place before receiving a call or dial a call.

Use and Protection of DVD and CD Discs

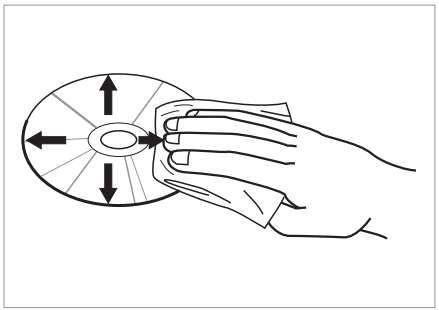


- Seize the disc as indicated in the above figure, and pay attention not to leave the fingerprint on the inner surface of the disc record information.
- The scratch on the disc surface will lead to loss of disc information and so on.
- Don't paste tape, paper slip, or label on the disc. Don't scribble on the disc.
- Don't play the damaged, distorted or scratched discs, and if they are played, it will seriously damage your vehicle laser record player.

Disc Storage

- Please place the discs inside the disc box, to be stored in a cool and dry place, avoiding insulation of sunlight or high temperature as well as high humidity.
- Never take out a disc rushedly or forcibly when it is to be retreated from the record player, and otherwise, it may damage the disc or the playing device.
- Never try to insert a disc when playing device or igniting switch is turned off.

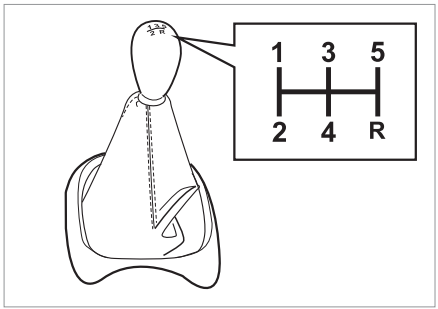
Use and Protection of DVD and CD Discs



It may lead to unsatisfactory playing effects if fingerprint, dust or clay is present on the disc surface. Clean soft cloth can be used to maintain the neatness of the disc surface. Please use neutral cleaning agent for cleaning if the surface is too dirty. Discs shall be wiped in the radius direction from inside to outside, as indicated in the above figure.

Manual Transmission Gear

5-gear Manual Transmission Case



Positions of respective gears are marked on the handle of the manual transmission gear. The transmission gear is fitted with synchronizers for respective shift positions, so that respective shifting operations are very easy.

Description:

1.When it is to be shifted to reverse gear (“R”), the operation shall be performed at least 3s after the vehicle has been fully parked. It will damage transmission gear when reverse shifting is performed during vehicle ride.

2.Under low-temperature environment, it is normal for shifting to be difficult before the temperature of lubricant for transmission gear is raised, and it will not damage transmission gear.

3.If shifting is very difficult sometime, it is required to switch into neutral position first and raise the clutch pedal at the same time, and then tread down the clutch pedal and shift into the 1st gear or the reverse gear.

4.Don't use the control rod of transmission gear for handrail, which may lead to mature abrasion of the shifting fork with transmission gear.

⚠ Notice

During downshift from 5th gear to 4th gear, never shift it into 2nd shift by mistake, which may lead to over high rotational speed of engine, up to the pointer of rotational speed in the red zone. Such disoperation may possibly result in the damage of engine.

Shifting Operation

Recommended Vehicle Speeds for Shifting Operation

Shifting	Recommended Vehicle Speed
1~2	20Km/h
2~3	40Km/h
3~4	55Km/h
4~5	75Km/h

Shifting operations according to the vehicle speed recommended in the above table can achieve fairly good fuel economical property and driving performance.

- Pay attention to the speed of engine and the speed of vehicle to be matched during shifting operation.
- A proper shift can increase the rate of fuel utilization and extend the service life of engine.
- Please don't shift into the neutral gear when vehicle speed is very high, and otherwise it may damage engine.

Use of Clutch

•Fully tread down the clutch pedal and the release it slowly prior to gear shift.

•Don't place feet on the clutch pedal during ride, and otherwise it may lead to unnecessary abrasion of the vehicle clutch.

•Don't make partial use of clutch during rice on slopes, to avoid unnecessary abrasion.

•Don't quickly and repeatedly tread the clutch pedal when vehicle is parked on a slope with parking brake.

Manual-gear Vehicle Driving Skills

•Never shift into neutral gear during slide along a slope, and this is very dangerous.

•Don't keep treading the brake pedal, and otherwise it may lead to overheated and malfunctioned brake. Please slow down and shift into the low-speed gear when you are slide downwards from the top of the ramp, and engine brake can help deceleration.

•Slowdown prior to shift into low-speed gear can help you avoid damage of engine arising from overheating.

•Make sure that the vehicle has been fully stopped prior to shift into reverse gear, and otherwise, it is liable for transmission case to be damaged. Tread the clutch pedal, shift the control rod for speed change into the neutral position, and wait for 3s before shift into reverse gear.

•During ride on smooth surface, particular care shall be taken during brake, acceleration, or gear shift, as sudden change in speed of engine on smooth surface may arouse wheel skidding, for traction to be lost, and for it to be difficult to control the vehicle.

⚠ Warning

►If the vehicle is out of control during high-speed ride, it will lead to the danger of vehicle turnover.

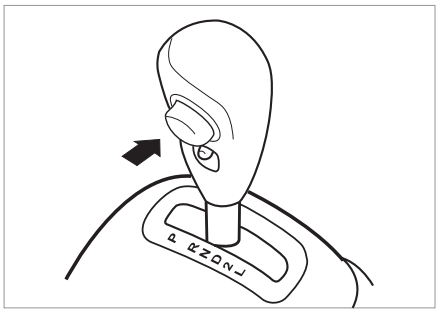
►If steering wheel is turned in a rush when two or more than two wheels are off the driveway, it is very liable for vehicle to be out of control, and deceleration shall be performed for the vehicle to go back onto the driveway.

►During vehicle collision, it is more liable for passengers not wearing safety belts than those wearing safety belts.

►Overdrive is strictly prohibited.

Automatic Transmission Gear

Automatic Transmission Case

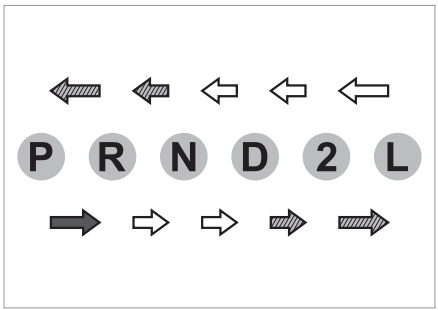


The automatic transmission cases of Refine commercial vehicles are provided with 4 forward gears and one reverse gear. The shift gears on the control handle of automatic transmission case are indicated as in the figure.

⚠ Notice

Don't shift the control rod to “R” or “P” position during vehicle ride.

Shifting Reference



⇛ Brake pedal must be treaded during gear shift and the locking button on the control rod shall be pressed

➡ The locking button must be pressed during gear shift.

⇨ Able for free shift

Acceleration shall be slowly performed, top enhance the vehicle economical performance. Automatic transmission gear is able for change in shift positions, to achieve your required driving speed.

Shift Positions and Functions of Automatic Transmission Gear

P-Parking Gear

The control rod of transmission gear is placed on “P” position, used to maintain the vehicle in still status during parking or starting engine. At any time, manual brake is to be used for parking and the gear is to be placed on the “p” position.

⚠ Notice

The gear can only be placed on the “P” position after the vehicle has been fully parked, and otherwise the transmission case will be damaged.

R-Reverse Gear

This gear is used for backing of vehicle. The vehicle shall be in a completely still status when control rod is shifted to “R” position.

N-Neutral Gear

The transmission case is in a natural status on the neutral position, namely the gear of transmission case is not used. Engine can be started when the control rod for speed change is on the “N” position. It is recommended not to use neutral position during ride.

D-Driving Gear

This gear is used for normal drive. The transmission case automatically switches between the four forward gears according to the load of engine and the speed of vehicle, to provide the best economical performance and dynamic performance. If the vehicle speed exceeds 96km/h (60mph), please don't manually shift to the “2” position or the “L” position.

2-2nd Gear

Please use this gear during drive on slippery road surfaces or mountain roads or slope climbing. The “2” gear will automatically switch between fairly low-speed gears, while not switched to high-speed gears. Manually shift to the “D” position, to return to the normal driving status.

L-Low-speed Gear

Please use this gear during climbing along a very steep slope or utilization of resistance property of engine during downslide along a steep slope. The vehicle speed for shift into “L” gear shall not exceed 50km/h (31mph).

It shall be shifted to “2” gear when vehicle speed exceeds certain value, while it is to be shifted to “D” gear if speed is to be further increased, to prevent engine from being overheated.

Description:

•For a stale operation, the brake pedal shall be treaded down when it is shifted from “N” or “P” to forward gear or reverser gear.

•Only fully treading down the brake pedal may shift the control rod of transmission gear from “P” gear to other shift positions.

•You may randomly shift from “R”, “N”, “D”, “2”, and “L” to “P” position as per requirements, but at this point the vehicle must be fully stopped, to avoid damage of transmission gear.

⚠ Notice

►It can only be shifted to “R” or “P” gear when vehicle has been completely stopped.

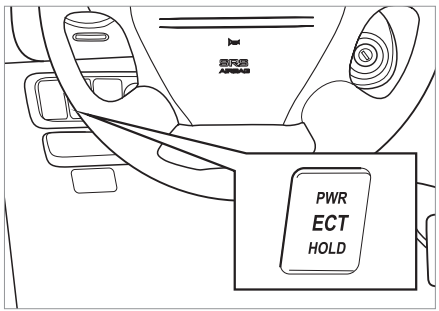
►The brake pedal shall be stepped down when it is shifted from “P” or “N” position to “R”, “D”, “2”, and “L” positions.

►Don't use “P” gear to replace parking brake. The manual brake shall be pulled up even if the transmission gear is on the “P” position during parking.

►Engine shall be flamed out when you leave vehicle, even if it is only a moment.

►The liquid level of lubricant for automatic transmission gear shall be checked on a regular basis. Refer to the filling amounts in the maintenance list if it is required to fill lubricant.

Electric Control Dual-ScopeAutomatic Transmission(if Equipped)



Some JAC Refine vehicles are optionally matched with electric control dual-scope (power/normal) 4-gear automatic transmission gears. Under specific conditions, the electric control transmission gear switch can be pressed, to provide larger power or to increase controllability during rice.

“ECT” Mode

“ECT” is namely “POWER/ NORMAL” dual driving mode. Under “ECT” mode, the system computer will automatically delay the shifting time, to get in return a higher rotational speed power to drive the vehicle.

When “ECT” switch is pressed, the transmission gear will automatically alternate between the “NORMAL” mode, “POWER” mode, and “HOLD” mode, while the “PWR” or “HOLD” indicator lights will turn on or turn off according to current mode.

“ECT” and “POWER” modes can bring acceleration and enhancement in slope climbing performance, but at the same time they will increase fuel consumption, and the noise of engine becomes more obvious.

“NORMAL” Mode

The system is defaulted as “NORMAL”, namely normal mode, if switch for driving mode is not pressed.

Under normal driving condition, the electric control transmission gear shall be in the “NORMAL” mode, namely with switch or any button not pressed, and there is no display of “PWR” and “HOLD” indicator lights on instrument panel.

“NORMAL” mode provides stable automatic gear shift, as well as optimal fuel economical performance. It is recommended for you to keep the vehicle in “NORMAL” mode during normal drive.

For drive under this mode, push the control rod of transmission gear to “D” position and slowly tread the acceleration pedal. If it is required to speed up within a short time, fully tread down the acceleration pedal.

“POWER” Mode

Place the switch for driving mode on the “PWR” position, the electric control transmission gear will immediately enter into the “POWER” mode, and “PWR” indicating lamp turns on..

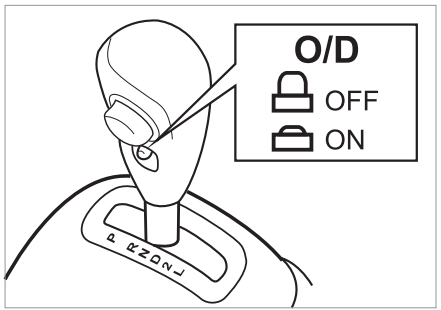
“POWER” mode can dig the potential of engine to a maximum degree in the respects of acceleration and driving force. Under “POWER” mode, vehicle acceleration is faster than under “NORMAL” mode, appropriate for operation during abrupt acceleration or slope climb.

“HOLD” Mode

Place the switch for driving mode on the “HOLD” position, the electric control transmission gear will immediately enter into the “HOLD” mode, and the “HOLD” indicator light will turn on.

It is proper to select “HOLD” mode when vehicle is to be started on icy and snowy road surfaces or wet and slippery road surfaces, and the vehicle can be stably driven on the “2” gear position. If it is required to speed up or to climb a slope within a short time, the “HOLD” mode is to be cancelled immediately, and other required mode shall be selected and entered.

Over Speeding Switch (if Equipped)



When over speeding switch is turned on, the engine will increase rotational speed through forcible downshift (generally downshift by one gear from the current driving gear), to gain a larger torque force, so as to increase vehicle speed within a short time, for overtaking.

Under normal driving condition, the control rod of transmission gear shall be placed on “D” position, and at the same time the over speeding switch shall be turned on. If it is required for an instant acceleration, the acceleration pedal can be fully stepped down, and the automatic transmission gear will speed up through downshift within a short time according to the actuality of engine.

Description:

•The over speed driving switch shall be turned on under general circumstances, to save fuel and to achieve a stable drive.

•When it is required for engine brake to be used on “D” shift, or it is required for repeated gear shifts between low-speed gears during slope climb at a slow speed, it is recommended for you to turn off the over speeding switch. The over speeding switch shall be turned on immediately after resetting to normal driving status.

Automatic-Gear Vehicle Driving Skills

•Never shift the transmission gear from “P” or “N” position to any other position when acceleration pedal is treaded.

•Never shift the control rod of transmission gear to “P” position during ride.

•The vehicle must be fully stopped prior to shift to “R” gear.

•Never slide the vehicle on neutral gear during downgrade, and this is very dangerous.

•Don't keep treading the brake, and otherwise it may lead to overheated brake and its malfunction. When you are sliding along a ramp, please slow down and shift to low-speed gear and engine brake may help you here. Vehicle must be slowed down before shift to a low-speed gear, and otherwise it will be difficult for engine brake to play its function.

•Make sure to use manual brake after the vehicle is parked.

•During ride on slippery road surface, particular care shall be taken about operations of brake, acceleration or gear shift, and abrupt change in engine speed may cause lost traction for driving wheel, thus lead to vehicle out of control and grievous unexpected accidents.

•Don't keep treading the acceleration pedal during slope climb, and otherwise the transmission gear will be overheated.

⚠ Warning

►Vehicle out of control during high-speed ride may lead to the danger of turnover.

►It is very liable for vehicle to be out of control if the steering wheel is rashly turned when two or more than two wheels are off the driveway. The vehicle shall be decelerated and then driven back to be driveway.

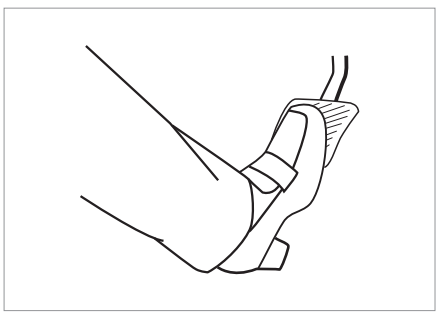
►During vehicle collision, it is more liable for passengers not wearing safety belt to be injured than passengers wearing safety belt.

►Overdrive is strictly prohibited.

Brake system

The respective parts of brake system are extremely important to safety. Please strictly observe the maintenance standards, and have the special sale service shop of JAC Refine perform periodic checks of the brake system.

Driving Brake



•Your vehicle is equipped with vacuum boosting 4-wheel disc brake. The brake booster may help you to fulfill brake with smaller treading strength, and the ABS system may help you to maintain the steering control during emergency brake.

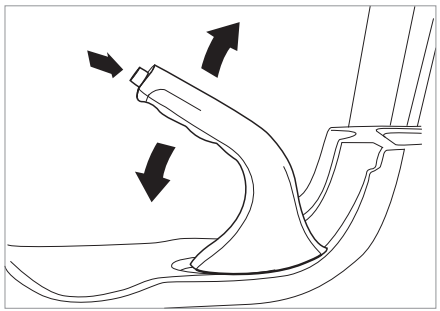
•The driving brake system is a dual-pipeline design, with the other line still effective if one line is broken down. When there is only one braking system working, you must apply more pressure on the brake pedal, and thus it is difficult for vehicle to be braked within a short distance. If it is not a special case, you should select a safe place to park your vehicle and wait for support from the service shop.

•It may indicate that the vehicle is in shortage of brake liquid if the alarm light of brake system turns on. If it is still on after fluid has been added, please immediately have the special sale service shop of JAC Refine to check and maintain it. If the vehicle fails to drive, it must be carried to the place of service shop through hauling or in any other safe manners.

⚠ Warning

If failure arises with your brake system, or you believe that problem exists with brake, please immediately contact the special sale service shop of JAC Refine for inspection. It is very dangerous to drive any vehicle with failure, and it will lead to grievous unexpected accidents and even death.

Parking Brake



•Using manual brake may fulfill parking brake. During parking, it is only required to pull tight upward the manual brake forcibly.

•During parking on a map, if the vehicle is equipped with manual transmission gear, it shall be shifted into the 1st gear after manual brake has been tightly pulled. It should be placed on “P” gear if the vehicle is equipped with automatic transmission gear.

•In order to avoid drive under any case of careless pulled up manual brake, it must be confirmed that the manual brake has been fully put down prior to drive.

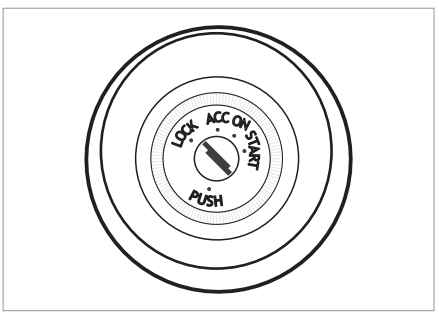
•The manual brake shall be put down, and the control rod shall be pulled up a little bit. The locking button shall be held and the manual brake is to be fully pushed down.

⚠ Warning

►To avoid unexpected movement of vehicle, the manual brake shall be tightly pulled each time after vehicle has been stably parked.

►When removing parking brake, pay attention to that the manual brake must be fully put down. Partially put-down manual brake may cause overheated brake system, this to reduce and damage brake performance. In addition, it may also lead to premature abrasion of brake friction wafer with rear wheels.

Igniting Switch



"LOCK"

Key can only be inserted or pulled off in this position. When vehicle is parked and to be locked, the key shall be pressed downwards and turned counterclockwise with slight force. The key shall be pulled off from the "LOCK" position, and the steering wheel will be locked up, to prevent the vehicle from theft.

"ACC"

When key is on this position, acoustic system, cigarette lighter and vehicle DC power supply can be used. It is not recommended to use them when vehicle is not yet started, to avoid power loss with battery.

"ON"

When key is turned to this position, the indicator light on the instrument panel will turn on, ready for inspection, and at the same time all the devices and components on the vehicle will be in the on-call status. Key is on this position when vehicle is running.

If engine has not yet been started, never use the key on "ON" position, as this will generate self discharge, may possibly damage the igniting system, and cause power loss with battery.

"START"

This position is only used for igniting engine. When key is turned to this position, the engine will start. Release the igniting key after engine has been started, and then the switch will automatically return to the "ON" position.

Starting Engine

General Description Prior to Start

•Before start, the control rod of the vehicle equipped with manual transmission gear shall be placed on neutral position, while placed on "P" or "N" position for vehicle equipped with automatic transmission gear. At the same time, the manual brake shall be put down.

•After engine has been started, please immediately release the igniting key so that it returns to the "ON" position from the "START" position. Never run the starter and the engine at the same time.

•It will emit fairly strong running noise after an engine in cold state is started, and this is because oil pressure must be firstly established during the gap adjusting process for the hydraulic valve. This is normal and no much worry is required.

•The vehicle shall be driven as early as possible, to avoid long-time operation of engine under parking status.

•High rotational speed and sufficient acceleration shall be avoided before engine has reached its operating temperature.

•It is not allowed for the vehicle types equipped with waste gas catalytic converter to be started by traction driving for more than 50m road section, and otherwise the fuel that has not been burned up may possibly enter into the catalytic converter and damage it.

•Try as much as possible to use battery of other vehicles for auxiliary start, before traction is to be adopted for start. Refer to the section of “Emergency Start”.

⚠ Warning

Never operate engine in airtight rooms or unventilated places. Carbon monoxide emitted from vehicle is odorless, and may cause grievous intoxication and even death.

Starting Gas Engine

Gas engine is deployed with fuel ejecting device, and this device may automatically provide the mixed gas of “fuel + air” in correct mixing proportion according to different external ambient temperatures.

•Don't apply acceleration both before start and during start, when engine is under either cold or hot conditions.

•If engine is not immediately started, stop starting in 10s and re-start in about half a minute. If engine still fails to be started, it may possibly be caused by blowout of fuse with electric fuel pump.

•If engine is very hot, a little bit acceleration can be applied after engine has been started.

Starting and Shutting Diesel Engine

As diesel engine has high compression ratio, large starting resistance, and high starting rotational speed, it is rather difficult to be started in winter. Vehicles with adoption of diesel engines are generally equipped with auxiliary starting preheating device.

•Turn the igniting key to the “ON” position, wait for the preheating indictor light to turn off, and then start the engine.

•Start the engine if it has no reaction, and after waiting for about half a minute, re-preheat and start it.

•Don't shut down the diesel engine immediately after it has run for a comparatively long time with high load, and instead, it is allowed for an idling run for 2 minutes, thus to avoid the engine from being overheated.

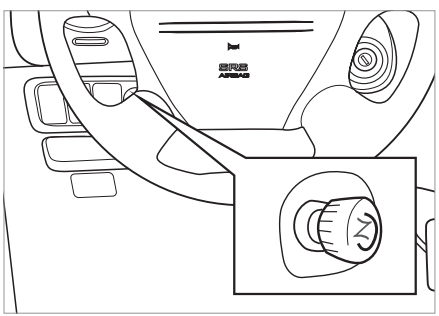
⚠ Warning

For the vehicles equipped with turbochargers, do not shut down the engine immediately after high-speed travelling. Remember to let the engine work idly for 1-2 minutes so as to cool down the turbocharger, otherwise the pressurizing system may be damaged.

⚠ Notice

The fan of radiator will continue to run for a period of time after the engine is shut down (even if the igniting switch is turned off), reachable to about 10 minutes to maximum.

Engine Idling Adjusting Knob (Diesel Engine)



When outdoor temperature is very low or it is necessary to heat the engine, please turn the switch clockwise up to the RPM point for engine to work freely. Once heating is completed, please turn back the switch counterclockwise.

2 Safety

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The Safety Belt

To protect the driver and passengers from the injury in event of traffic accidents, make sure to correctly fasten the safety belt during the travelling, which is of extreme importance.

⚠ Warning

►One safety belt should be used only by one passenger, or it's extremely dangerous.

►During the travelling, the child passenger should be placed on second row or third row seat and be fastened with folding safety belt.

►Some countries require using the certified child restraint device for babies and children. It's strongly recommended to use the child restraint device for the babies and the children with less than 18kg body weight.

►The regulations vary for various countries while placing the child on front row seat during travelling. It's recommended that you should abide by related regulations.

►Do not twist the safety belt while fastening the safety belt.

►Check the safety belt for rupture and damage and the metallic components for deformation. Otherwise, replace the safety belt or metallic components.

►When the safety belt gets dirty, clean with neutral detergent and warm water and air dry in shady location.

It's prohibited to whiten or dye the safety belt, in order not to impair the strength and function.

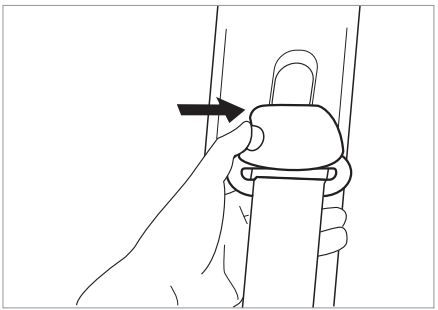
►After the occurrence of accident, do not continue use even the safety belt looks intact and replace the safety belt in full set.

►Do not adjust the seat safety belt when the vehicle travelling.

►To protect you and the passengers from accidental injury, the entire passengers must fasten the safety belt when the vehicle is travelling.

►When the seat backrest is at fully vertical position, the safety belt can provide the maximized safety protection. When the backrest is inclined, in the event of traffic accident, especially in the event of the forward collision accident, the passenger may slip out from the safety belt to cause injury.

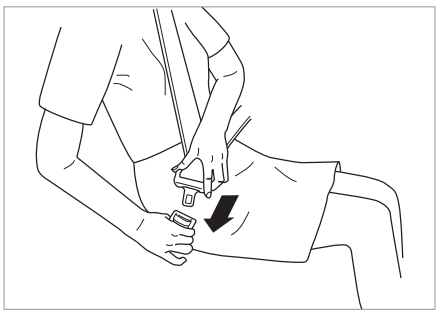
Safety Belt Height Adjustment Device



The height of the front seat safety belt can be adjusted by the anchorage. The safety belt should be adjusted so that the safety belt passes through the abdomen and chest and crosses over the shoulder, instead of the neck. It can't realize the most effective protection if the adjustment of seat safety belt is too close to the neck.

To adjust the height of safety belt anchorage, press and hold the adjustment button and then lower or lift to proper position. Upon the release of the button, please slide the anchorage up and down to confirm if it's at lock position.

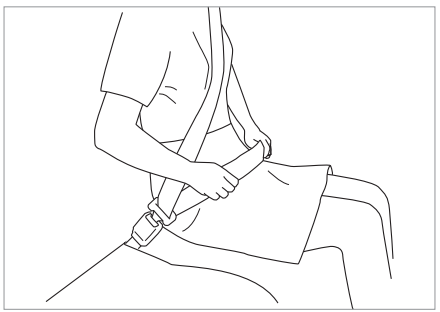
Three-Point Locking Automatic Safety Belt



Pull out the safety belt from the retractor case and insert the metallic buckle into the buckle seat. The “click” sound may be heard upon the locking of the metallic buckle. After the abdomen belt is properly adjusted, the safety belt will automatically retract to closely fit with your hip.

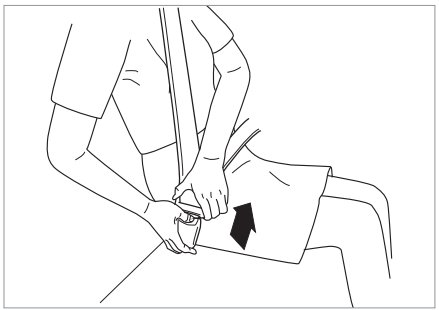
When you lean or move forward at low speed, the safety belt will extend automatically. However, in the event of sudden or strong collision, the safety belt will automatically lock to control the body of passenger who fastens the safety belt. If you lean forward at high speed, the safety belt will also automatically lock.

Adjustment of Three-Point Safety Belt



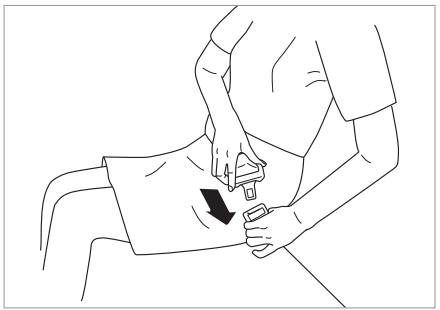
Try your best to pull downward the safety belt so that the safety belt is located at your hip, instead of your waist. If the safety belt is located at the higher location of your body, in the event of accident or sudden braking, the body may slip out from the underside, which may lead to serious injury or even death.

Release of Three-Point Safety Belt



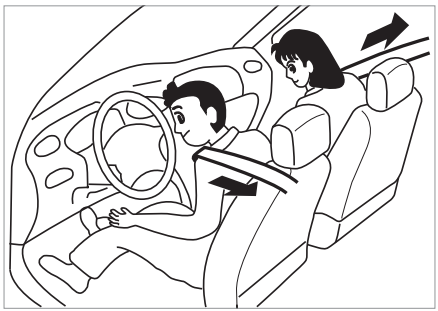
Grasp the buckle seat and depress the release button to loosen the safety belt. Upon the release of the safety belt, the belt will retract to the retractor case automatically. If it fails, check the safety belt for twist or kink and try it again.

Two-Point Static Safety Belt



Grasp the buckle seat with hand, insert the metallic buckle of the safety belt into the buckle seat, and properly adjust the tension of the safety belt.

Safety Belt Pre-Tensioner (If Equipped)



The front row seat of the vehicle is equipped with the safety belt pre-tensioner. This device can guarantee the safety of the driver and the passengers sitting on front row seat in event of serious collision. In event of strong collision, the pre-tensioned safety belt and airbag of front row seat will function simultaneously.

The working theory of the pre-tensioner is same with that of the emergency locking retractor. In event of emergency braking of vehicle or when the tires incline harshly forward, the retractor of the safety belt will enter into locking state.

At the same time of harsh collision, the pre-tensioner will function to tense the passengers in opposite direction of the collision, in order to help keep the passengers at original location.

The safety belt pre-tensioner is one constituent part of the entire SRS (Safety Restraint System).

Note:

When the safety belt pre-tensioner is triggered, the slight explosion sound may be heard, which belongs to normal phenomenon and therefore it's free of danger.

The safety belt pre-tensioner is designed for sudden occurrence of serious collision and can only be used once.

⚠ Warning

When the safety belt pre-tensioner is triggered, do not try to replace by yourself. The replacement must be fulfilled by the special sale service shop of JAC Refine.

Protection for Children and Pregnant Women

Protection for Babies



- Some countries require using the certified child restraint device for babies and children. It's strongly recommended to use the child restraint device for the babies and the children with less than 18kg body weight.
- The airbag is designed to protect the adults in the event of accidents, which has high hazard to the children. Therefore, it's prohibited to install the child restraint device onto the secondary driver seat equipped with airbag. Otherwise, when the airbag is inflated to explode, the huge impact force may lead to the injury or even death to the babies.

Protection for Elder Children

- When the children are too old to use the child restraint device, the vehicle safety belt should be used.
- Try best to arrange the children with higher age to sit on rear row seat and fasten the seat safety belt.
- When the children with higher age (above 13-year old) are sitting on front row seat, fasten the safety belt in the same way.

Protection for the Wounded

Use the safety belt while transferring the wounded. If necessary, please call the doctor for consultation of related knowledge.

Protection for Pregnant Women

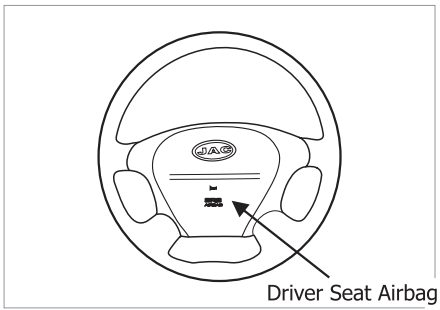


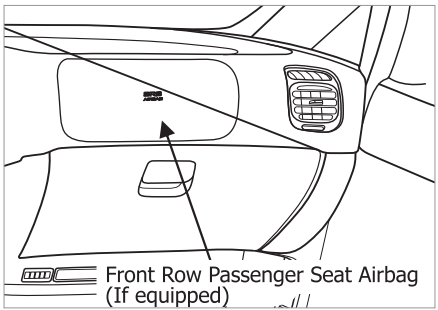
Please abide by the special instructions of the doctor while travelling with pregnant women. Try best to use three-point safety belt during travelling. The hip safety belt should be as comfortable as possible and as low as possible.

The pregnant women should be away from the steering wheel or instrument panel as far as possible and lean rearward and sit up, in order to reduce the injury danger to the mother and infant in the event of collision or airbag inflation.

Airbag

Safety Restraint (Airbag) System - SRS





Your vehicle is equipped with airbag (SRS) system. The “SRS AIRBAG” characters are marked on the pad cover at the center of the steering wheel and the glove box at the side of secondary driver seat. In the event of front collision, besides the protection furnished by the safety belt, the SRS can provide extra protection for the driver and the front row passenger.

Note: Please read the related instructions of SRS furnished at the rear of driver seat sun visor and within the glove box.

⚠ Warning

The airbag is not the substitution for safety belt, but one constituent of entire vehicle passive safety system. It can realize the maximum protection only when it functions in matching with the safety belt fastened by the passengers.

The airbag will be inflated to explode when the vehicle is subject to serious front collision, but will not trigger under side collision, rear collision or rollover. The airbag can only be used once and is non-reusable.

SRS Components and Functions

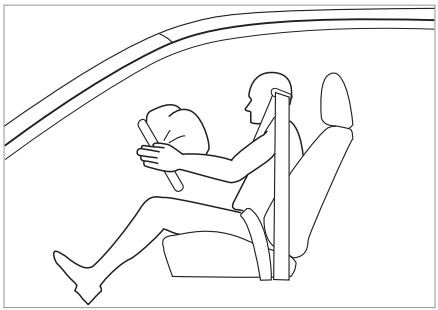
The safety restraint system (SRS) of the vehicle includes:

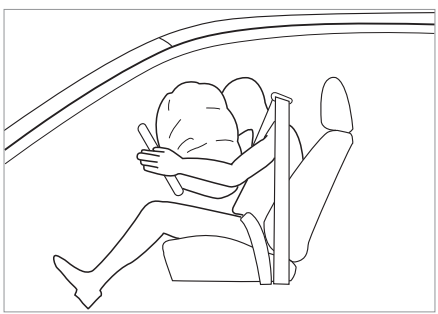
- Airbag module (master/secondary)
- Safety belt pre-tensioner
- SRS control module (SRSCM)
- SRS airbag alarm lamp (SRI)

•When the ignition switch is at “ON” position, the SRSCM continually monitors the collision from front and near front and determines if the collision severity level requires the trigger of the airbag.

•When the ignition key is shifted to “ON” position or when the engine is started, the SRS indicator lamp (SRI) on the instrument panel will flash for 6s and then turn off.

•Upon the detection that the front collision of the vehicle is serious enough, the SRSCM will issue the trigger command and control the functioning of DAB, PAB, and pre-tensioner safety belt. The fully inflated airbag and the proper safety belt can slow down the frontward movement of the driver and passenger and thus ease the injury on the head or the chest. After being fully inflated, the airbag will be deflated immediately to make front view field for the driver.





How SRS Functions

•In the event of vehicle collision accident, the sensor of the SRS system can sense the sudden deceleration of the vehicle. When the collision severity level is high enough or when the forward collision angle of the vehicle is less than 30^{o} , SRS will immediately trigger the airbag and be inflated rapidly as well as trigger the pre-tensioner of seat safety belt.

•In the event of vehicle collision, the seat safety belt will help secure your lower body and main body while the airbag will absorb the collision energy to protect head and chest.

•After being inflated, the airbag will be deflated instantaneously, with interval of approximate 0.1s. Therefore, it will not obstruct the view field of the driver and the control of the vehicle.

•When the SRS system is functioning, the explosion sound may be heard and the misty particles can be seen, which belong to normal phenomenon. In fact, this smoking is the particles on the surface of airbag. Please clean the face and hands with warm water and toilet soap later on, in order to avoid the skin sensibility.

⚠ Warning

When the SRS system is functioning, the explosion sound may be heard and the misty particles can be seen, which belong to normal phenomenon. Please clean the face and hands with warm water and toilet soap later on.

►The SRS only functions when the ignition key is at “ON” position. When the airbag alarm lamp has no response at the start of the engine or always illuminates during the travelling, the SRS may have fault. Please ask the special sale service shop of JAC Refine for checking at soon as possible.

►Before replace the fuse or disconnect the battery poles, shift the ignition key to “LOCK” position or remove the ignition key. When the ignition key is at “ON” position, do not remove or replace the fuse connected with the airbag, or the alarm lamp will illuminate.

SRS Maintenance

•In fact, the SRS is a maintenance-free system. In case of presence of fault, please ask the Refine authorized service dealer and professionals for repair.

•The removal, installation, repair and other operations of the SRS system must be fulfilled by the professionals. The improper repair will lead to serious potential safety hazard.

•Please wipe and clean the portions where the airbag locates with clean cloth and water. Do not use the chemical detergent with unknown composition.

•Do not place air freshener within the vehicle, especially on the instrument panel. The ingress of unknown chemicals into the instrument components and ventilation system may damage these components.

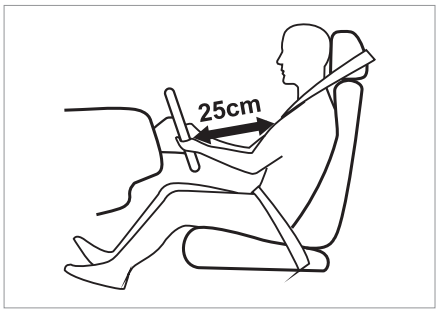
⚠ Warning

►Do not modify the configuration or wiring of SRS without authorization, otherwise it may lead to the loss of system function, which may not trigger in the event of the collision.

►Do not arrange at will the airbag or SRS components and wiring, which may lead to abnormal airbag inflation and cause injury to others.

Seat Safety

Driver Seat



It's recommended to conduct following adjustments for the driver seat:

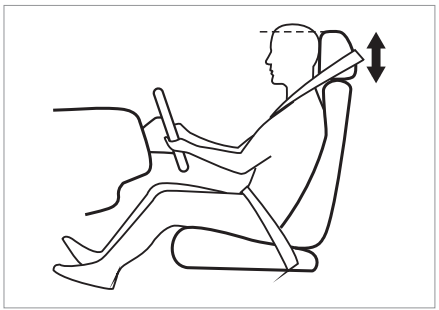
- Adjust the driver seat back and forth so that the driver can depress the pedals to the end with easy feet stretch.
- The driver must keep at least 25cm reach from the steering wheel and the instrument panels so that it can guarantee the most effective safeguard at the trigger of the system.
- Adjust the inclination of the seat backrest so that the seat backrest can closely fit with your back and you can reach to the topmost point of the steering wheel with easy arm stretch.

Front Row Passenger Seat

It's recommended to conduct the following adjustments for the front row passenger seat:

- Adjust the seat backrest to certain vertical position.
- The passenger should be capable of resting the feet with ease within the space under the instrument panel.
- Adjust the seat as rearward as possible.

Headrest



The height of the headrest should be adjusted accordingly based on the body height and head location of the passenger. The correctly adjusted headrest and safety belt can provide effective protection.

Adjustment of Headrest Height

- Grasp the both sides of the headrest with both hands and move the headrest upward or downward to proper location.
- It can realize the best protection when the upper edge of the headrest is level with or slightly higher than eyes at the lowest position.

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Running-In Period

Running-In

After a period of new vehicle driving, the internal wear of engine is much severer than any other running part after running-in. The running-in effect mainly depends on the travel conditions of initial 2000km.

Within 1000km

The following are experiences for reference:

- Don't make full-open throttle.
- Keep the running speed within 80km/h.
- Avoid high speed running of engine.
- Don't use the new vehicle to tow other vehicles.

⚠ Notice

▸New tyre must be run in to achieve the best adhesion. Take special care during the first 500km and drive the vehicle smoothly.

▸The new brake linings shall be subjected to running-in as well, since the best frictional property cannot be achieved in the first 200km. Please increase the brake pedal force properly in case the best braking effect is not achieved. This applies to the case of replacing brake lining.

From 1,000km to 2,000km

User can increase the vehicle speed to the maximum or the maximum allowable engine speed gradually.

The following applies to running-in period or after running-in:

- Never run the engine at high speed in cold state no matter whether transmission is in neutral gear or other gear.
- Don't drive the vehicle at too low rotational speed. In case the engine runs instable, please shift to the lower gear.

❀ Don't run the engine at unnecessary high speed. Shifting to high gear earlier is in favor of fuel saving, work noise reduction and environment protection.

After Running-In

The red zone of tachometer indicates the maximum permissible speed of engine. Don't have the pointer arriving in this zone; otherwise, the engine may be damaged.

Economic and Green Driving

Fuel consumption, environmental compatibility and abrasion of engine, brake and tyres mainly depend on the following three factors:

- Individual driving style
- Individual service conditions
- Technical conditions

The economic and foreseeing driving style may reduce the fuel consumption by 10-15% with ease. The following are the tips for your driving, which help environment protection and fuel saving.

Tip 1

❀ Foreseeingly Driving

The vehicle consumes fuel the most during acceleration. Drive your vehicle foreseeingly to reduce braking and reduce acceleration consequently. In addition, if the conditions permit, have the vehicle sliding until it stops, for example, when the next red light signal is estimated to be encountered.

Tip 2

❀ Correct Tyre Pressure

Maintain the correct tyre pressure all the time. 0.5bar reduction in tyre pressure may increase fuel consumption up to 5%. Too low tyre pressure may increase rolling resistance, aggravate tyre wear and deteriorate driving quality consequently.

Please check tyre pressure when the tyres are in cold state.

In addition, don't use winter tyres for the full year, since the winter tyres generate large noise and increase fuel consumption up to 10%. Please provide your vehicle with summer tyres in time upon season change.

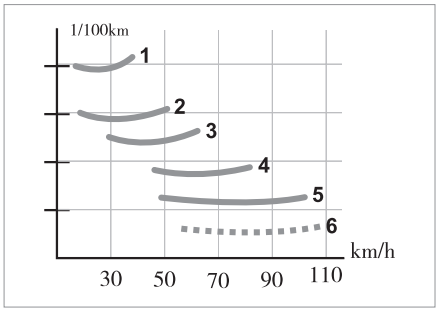
Tip 3

❀ Energy Saving Upon Gear Shifting

Another efficient way to save fuel is to shift the vehicle to high gear earlier. If not, the engine will run at high speed and cause unnecessary fuel consumption. The figure shows the relationship between fuel consumption (L/100km) and vehicle speed (km/h) of each gear.

The following criteria may be helpful to you: drive the vehicle by one vehicle length at 1st gear only and then shift to the next higher gear when the engine speed is about 2000rpm.

For vehicle equipped with automatic transmission, please step the throttle pedal slowly and don't make throttle fully open to achieve forced lower gear shifting. In this way, the economic pattern is selected automatically, increase the gear earlier and reduce the gear later.

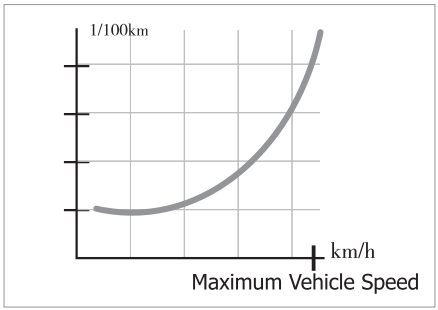


Tip 4

❀ Don't Drive the Vehicle at Maximum Speed

Try best to avoid high speed vehicle running, since the fuel consumption, emission and travel noise will increase twice when the vehicle runs at high speed.

The right figure shows the relationship between fuel consumption (L/100km) and speed (km/h). If the vehicle runs at 3/4 maximum speed, the fuel consumption may reduce about half.



Tip 5

❀ Reduce the Idle Time of Engine

Please shut down the engine in the case of traffic jam, passing railway crossing and long time waiting for red light signal at road junction, since the fuel saved within 30-40s will be much more that required by engine restart.

Tip 6

❀ Periodic Maintenance

It's the prior condition to ensure economic travel to carry out periodic maintenance in the special maintenance station of JAC Refine. Proper engine maintenance is not only helpful to increasing travel safety and maintaining your vehicle value, but also helpful to reducing fuel consumption.

If the engine is not well maintained, the fuel consumption may increase by 10%.

Please check engine oil level when oiling each time. Engine oil consumption mainly depends on engine load and rotational speed. Depending on different driving styles, the engine oil consumption may reach to 1.0L/1,000km.

Additional tip: use of light engine oil contributes to reduction in fuel consumption.

Tip 7

❀ Don't Carry Unnecessary Load

In addition to driving style and regular maintenance on vehicle, the further possibility to reduce fuel consumption is not to carry unnecessary load.

Since each weight may increase fuel consumption, it is necessary to check the luggage boot at intervals to avoid unnecessary vehicle load.

For the sake of convenience, many vehicles are equipped with roof luggage rack even it's not required. The roof luggage rack may increase air resistance. When your vehicle speed reaches 100-120km/h, the fuel consumption will increase by about 12% even if the roof luggage rack is empty.

Tip 8

❀ Reduce Short Journey Travel

The engine and catalytic converter must reach proper working temperature to effectively reduce fuel consumption and exhaust emission.

The fuel consumption of medium rank passenger car in short time after cold starting may even reach 30-40L/100km. After 1km running, the fuel consumption will drop to 20L. After 4km of running, the engine may reach normal working temperature and the fuel consumption will be at normal level. Therefore, it's better to avoid short journey travel. If your target is right round, please try to get there by walking.

Ambient temperature is very important as well: the fuel consumptions (L/100km) of the same travel journey (km) with ambient temperature being +20℃ and -10℃ respectively are different. Fuel consumption in winter is more than that in summer.

Tip 9

❀ Saving Electricity

Electricity of the vehicle is generated by the generator during vehicle running and used by the vehicle. Opening or switching electrical equipment on will increase generator load and fuel consumption. Rear window heating, front small light, heating and air conditioning system require very high power. For example, every 10h of rear window heating consumes 1L fuel. Therefore, please turn off the electrical equipment if not required.

Tip 10

❀ Making Record

Making travel record before and after driving vehicle helps to reduce fuel consumption. In this way, you can find out the variation in fuel consumption (favorable or adverse) and take corresponding measures if necessary. If the fuel consumption rises, please think about the travel mode, site and road conditions etc. after the last time of oil servicing.

Winter Driving

Engine Oil

The engine oil will get very stiff when the temperature is low and cause engine difficult to be started. In such cases, please use special engine oil for winter.

Engine Coolant

If the temperature of the region where your vehicle is used is below 0℃, the coolant inside engine and radiator may ice over and damage the cooling system. Therefore, please add sufficient anti-freezing agent in the coolant. The coolant mixed before engine delivery is effective even at -30℃ (-20℉). Please check the coolant concentration at the beginning of winter and fill coolant with proper concentration to the system if necessary.

Washing Solution

To ensure normal operation of windscreen or rear window at low temperature, please use washing solution applicable to be used in low temperature in low temperature region.

Battery

The low temperature will reduce battery electric quantity and such physical chemistry property is hard to avoid, which is why the cold battery, in particular, the one not completely charged can supply weak starting current only. It's recommended that you have your vehicle checked in distribution and service shop specially authorized by Refine before starting in frigid weather and have the battery charged if necessary. This will not only ensure effective start, but also ensure longer battery life.

Wiper Blade

Please check whether the blade is frozen to the windscreen or compartment glass before operating the wiper. If the wiper is frozen, please wait until the ice melts completely and the blade can move freely.

Vent Opening

Carry out cleaning on the vent opening after heavy snow to ensure the operation of heating and ventilation system is not impaired.

Preventing Lock Freezing

To prevent lock freezing, you may spray deicing agent or glycerol into keyhole. If the lock is frozen inside, please use heated key to melt the ice.

Note: the normal operation temperature of key is between 40℃ and 80℃. If you heat the key above 80℃, it will damage the pulse repeater at key head.

When washing your vehicle in winter, please cover the door lock with cloth to prevent water entering.

Parking Brake

When the ambient temperature is below 0℃, please don't apply parking brake in the case of shifting to 1st gear or reverse gear upon parking. If parking brake is applied, the brake shoe will be coated with water, which will freeze the brake shoe to the brake drum. By this time, to brake the vehicle on the slope, please insert a chock under the front wheel.

When ambient temperature is above 0℃, it's recommended to apply parking brake upon parking.

Washing Vehicle

In some regions, as the salt and other chemical substances sprayed on the road in winter may be corrosive to the vehicle, so please wash the vehicle according to maintenance requirements if conditions permit.

Water Bar

To avoid freezing of water bars at door and roof, please treat the water bar with silica grease.

Snow Tyre

It's recommended to use snow tyre when driving on road covered by snow and ice. To ensure stable driving, fit four tyres of same dimension and pattern to the four wheels. If the tyre abrasion exceeds 50%, it cannot be used as snow tyre any longer. Don't use the snow tyre which does not meet specification requirements.

Note: As laws and regulations on snow tyre (driving speed, compulsory application, type etc) of different areas are different, please comply with the laws and regulations of the region where you use your vehicle.

Additional Equipments

Carry one shovel or scoop with short handle in winter to remove the snow in case the vehicle falls into snowfield. A small hair brush is useful as well, since it can be used to remove the snow on windscreen and rear window.

Limited Slip Differential (if Equipped)

The same as the traditional differential, the limited slip differential is effective for the rear wheel only. When the vehicle turns, the rotation speeds of wheels at both sides are different. If difference is that in case wheel of one side loses traction force, the rear wheel of opposite side will generate greater torque to increase traction force.

Note: under stable state, when the rotational speed of rear right wheel and rear left wheel is different, the limited slip differential may operate. The following procedures are used to verify whether limited slip differential performance is proper.

- Park the vehicle in such way that wheel of one side is on the dry gravel road and wheel of opposite side is on the icy, snowy and muddy land and drive the vehicle to observe the state of limited slip differential. If the limited slip differential function is good, the vehicle will not be stopped up.
- Step the accelerator pedal slowly and step it forcibly when the traction force is proper.

⚠ Notice

►If wheel of one side is raised and that of opposite side contacts the road, don't start the engine. Otherwise, the vehicle will jump forwards.

►When a certain rear wheel is trapped in muddy land or snowfield, you can drive the vehicle off through stepping the accelerator pedal suddenly. However, don't have the engine running at high speed over long time, since this may damage the limited slip differential.

Brake

Basic Description

•Abrasion of brake lining mainly depends on service conditions and driving style. In particular, for vehicles mainly traveling for urban traffic and short distance traffic or those driven in motion mode, it's necessary to check thickness of friction lining at interval specified in maintenance period.

•Shift to low gear in time upon downslope driving to use braking effect of engine. In this way, the load of brake can be relieved. To increase the braking force, apply intermittent braking other than continuative braking.

⚠ Notice

Under certain working condition, for example, after driving in water or in heavy rain or after vehicle washer, the braking effect will be delayed due to moisture or icing of brake disc and friction lining in winter. In such cases, please apply the brakes for few times to dry the brake. When the vehicle drives on road with salt spraying (for unfreezing), the braking effect will be delayed if the brake is not applied for a long time. When apply the brake, please remove the salt deposit on the brake disc and friction lining first.

Brake Overheating

⚠ Notice

►When no braking is really required, never step the brake pedal slightly to make the brake "slipping", since this may result in brake overheating, lengthen braking length and increase brake abrasion.

►If the vehicle is to travel downward on the steep slope, please reduce the speed, shift to low gear (manual transmission) or select low running class (automatic transmission). In this way, the braking efficiency of engine can be used and the load of brake can be relieved.

►If front spoiler panel and wheel decorative sheet are equipped, it shall be ensured that the air flow to front brake is not impacted, or otherwise, brake overheating may occur.

Brake Booster

⚠ Notice

►The brake booster operates through vacuum. Since only engine running can generate this low pressure, don't slide the vehicle with engine stalling.

►If the brake booster does not operate due to, for example, vehicle being towed or brake booster damage, please step the brake pedal forcibly to compensate brake boosting.

Antilock Brake System (ABS)

•ABS can noticeably increase active safety of vehicle. Compared with conventional brake system, the major advantage of ABS is that it can maintain good steering ability under any road conditions. As the wheels are not locked, the system can execute normal braking even if full brake is applied on wet road surface. However, ABS cannot shorten braking length under all conditions. For example, take care and drive at low speed when driving on sand or road surface with fresh snow and the braking length in such cases may be longer.

•Alteration on vehicle (for example, engine, brake gear, chassis or wheel/tyre) may affect ABS functions.

⚠ Notice

The physical limit cannot be exceeded, even if ABS is equipped, and in particular, extreme care shall be taken when drive on smooth and wet road surface. When ABS starts function, make the vehicle speed fit road surface conditions and traffic conditions immediately.

Power Steering

•When the engine is running, don't keep the steering wheel in limit position over 10s. If not, the temperature of hydraulic oil passing power pump will rise suddenly. This will damage power steering system.

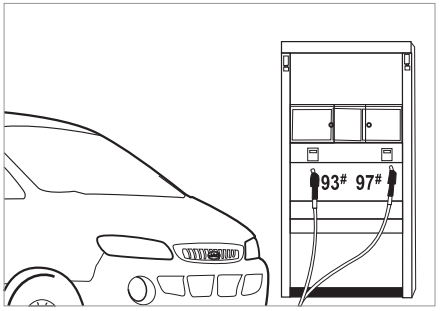
•If the steering wheel is in limit when the vehicle stops, the system will make a noise, since the power pump is now in higher load condition. In addition, the engine speed will drop suddenly.

Wheel Alignment

Every 10,000km of travel, have vehicle subject to test and adjustment of wheel alignment parameters once at least. Test and adjustment of wheel alignment shall be made in the special maintenance station of JAC Refine. For details, refer to related description in the chapter of technical data.

Fuel

Filling Fuel



Tank filler is located at the rear left side panel of vehicle body.

❀ So long as the fuel truck nozzle operating automatically according to set parameters stops operation, the fuel tank is “Full”. Don't fill fuel after that, or otherwise, the internal expansion space of fuel tank will be filled and the fuel will spill if being heated. After fuel filling, tighten the fuel tank cap and close the fuel tank cap plate until it locks

Description:

Wipe the spilled fuel off immediately, or otherwise, it may damage the paint surface. This is especially important for RME-fuel (formic ether).

For vehicle equipped with catalyst converter, never drive it to consume fuel off. Since this may cause overheating and damage catalytic unit.

Fuel Type

Petrol Engine

Petrol engine shall use 93# (RON) or above unleaded petrol.

Basic description

•Unleaded petrol shall be in accordance with DIN EN 228.

•In the case of emergency, octane ratio of petrol (RON) is lower than that required by the engine and the engine shall run at moderate speed with low load. Under full throttle, the large load or high speed will damage the engine. Please try to fill fuel with specified octane ratio.

•If the fuel octane ratio is higher than that required by engine, there is no limitation on fuel use. However, the fuel has no special advantage in terms of engine power output and fuel consumption.

❀ Vehicle equipped with catalytic converter can use unleaded petrol only.

❀ The function of catalytic converter will be seriously damaged even if leaded petrol is filled once only. Therefore, never make such attempts.

Diesel Engine

For fuel used by Refine diesel car, please refer to the following table:

Temperature Environment	Diesel Oil Grade
Above4℃	0#
Above -5℃	–10#
Above -14℃	–20#
Above -29℃	–35#

4 Vehicle Maintenance

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Vehicle Maintenance Requirements

Servicing Instructions

Before servicing your vehicle, make sure that you drive normally. In addition, follow the requirements to perform maintenance and service. When replacing with the spare parts having comparatively strict servicing conditions, have the job done by the qualified technicians. The vehicle requiring maintenance service must match the warranty conditions and you must produce service proofs. We also have provided service proofs and the particulars on warranty at delivery of a new vehicle.

Maintenance Requirements

The maintenance requirements consist of the following three parts:

- **Periodic Maintenance**

The items relating to inspections, adjustments and spare parts replacements will be listed in the Periodic Maintenance Schedule described hereunder. You must refer to the Maintenance Schedule and strictly follow the maintenance practices.

Maintenance of your vehicle should be carried out by the qualified technicians who have been trained by JAC, because they have professional servicing facilities. We strongly recommend that you use genuine spare parts of JAC during servicing or spare parts replacement. It is recommended that the engine oil, engine coolant, transmission fluid and brake fluid from the original manufacturers be used during maintenance.

- **Routine Inspection**

Perform inspections of related components and functions before or after you drives your vehicle. During maintenance, be sure to refer to the Maintenance Schedule and follow the routine inspection procedures.

- **Owner Maintenance**

You can perform the maintenance within your capability if you have the knowledge or hobbies in mechanical and electronic fields, but you must prepare all tools necessary.

Maintenance instructions

- Each time after you receives a maintenance service from a Refine service provider, please keep related maintenance records. These documents can prove that you have really obtained proper maintenance service. In case the service provider or personnel involved who is responsible for the maintenance fails to provide proper maintenance service, you can lodge a complaint. Then these documents will become important basis.
- You should keep the maintenance documents of the emission system on your vehicle. They can prove that the actual state of the system complies with related environmental protection standards.

Periodic Maintenance

Maintenance Under General Driving Conditions

R: Replacement **I**: Inspection, Cleaning after Inspection, Adjustment, Servicing or Replacement when Necessary

Perform Maintenance at the Specified Kilometers of Travel or Time Intervals (Whichever Comes First)		Kilometers*1,000	5	10	20	30	40	50	60	70	80	90	100
		Months	4	8	16	24	32	40	48	56	64	72	80
Maintenance of Engine Control System (Gasoline Engine)													
1	Engine Oil		R	R	R	R	R	R	R	R	R	R	R
2	Oil Filter			R	R	R	R	R	R	R	R	R	R
3	Air Cleaner			I	I	R	I	I	R	I	I	R	I
4	Fuel Filter					R			R			R	
5	Vent Hose of Vacuum Crankcase				I		I		I		I		I
6	Spark Plug				I		R		I		R		I
7	Timing Belt				I		R		I		R		I
8	Drive Belt (Water Pump/Generator)			I	I	I	I	I	R	I	I	I	I
9	Fuel System Leakage			I	I	I	I	I	I	I	I	I	I

Perform Maintenance at the Specified Kilometers of Travel or Time Intervals (Whichever Comes First)		Kilometers*1,000	5	10	20	30	40	50	60	70	80	90	100
		Months	4	8	16	24	32	40	48	56	64	72	80
Maintenance of Engine Control System (Diesel Engine)													
1	Engine Oil		R	Every 5,000km or 4 Months (Whichever Comes First) "R"									
2	Oil Filter		R	R	R	R	R	R	R	R	R	R	R
3	Air Cleaner			I	I	R	I	I	R	I	I	R	I
4	Fuel Filter					R			R			R	
5	Valve Clearance				I		I		I		I		I
6	Fuel Injection Timing				I		I		I		I		I
7	EGR System (Solenoid Valve/Intake Pipe/Hose)				I		I		I		I		I
8	Timing Belt				I		R		I		R		I
9	Drive Belt (Water Pump/Generator)			I	I	I	I	I	R	I	I	I	I
10	Engine Idle Speed			I		I		I		I		I	
11	Fuel System Leakage		I	I	I	I	I	I	I	I	I	I	I
12	Fuel Injection Nozzle (in Case Soot Exists in Exhaust Gas)					I			I			I	
13	Vacuum Pump (with Generator)				I		I		I		I		I

Maintenance Under General Driving Conditions

R: Replacement **I**: Inspection, Cleaning after Inspection, Adjustment, Servicing or Replacement when Necessary

Perform Maintenance at the Specified Kilometers of Travel or Time Intervals (Whichever Comes First)		Kilometers*1,000	5	10	20	30	40	50	60	70	80	90	100
		Months	4	8	16	24	32	40	48	56	64	72	80
	Routine Maintenance												
1	Engine Coolant		Every 24 Months or 40,000km, Whichever Comes First: “R”										
2	Manual Transmission Fluid		R		I		R		I		R		I
3	Automatic Transmission Fluid & Filter		I	I	I	I	R	I	I	I	R	I	I
4	Transfer Case Fluid		Every 24 Months or 48,000km, Whichever Comes First: “R”										
5	Rear Axle Oil		R		I		R		I		R		I
6	Clutch/Brake Pedal Stroke			I	I	I	I	I	I	I	I	I	I
7	Clutch/Brake Oil Can												
8	Hydraulic Brake Fluid					R			R			R	
9	Front Brake Stop			I	I	I	I	I	I	I	I	I	I

Perform Maintenance at the Specified Kilometers of Travel or Time Intervals (Whichever Comes First)		Kilometers*1,000	5	10	20	30	40	50	60	70	80	90	100
		Months	4	8	16	24	32	40	48	56	64	72	80
	Routine Maintenance												
10	Front Brake Caliper/Brake Cylinder/Brake Lining				I		I		I		I		I
11	Rear Brake Drum/Brake Shoe/Brake Cylinder				I		I		I		I		I
12	Hand Brake			I	I	I	I	I	I	I	I	I	I
13	Exhaust System/Bracket			I	I	I	I	I	I	I	I	I	I
14	Steering Gear Housing/Power Steering Pump, Belt and Hose			I	I	I	I	I	I	I	I	I	I
15	Upper and Lower Connecting Ball Joints and Dust Boots of Suspension				I		I		I		I		I
16	Steering Knuckle/Front Wheel Bearing				I		I		I		I		I
17	Engine Cooling System Hose			I	I	I	I	I	I	I	I	I	I
18	Brake Line Corrosion			I	I	I	I	I	I	I	I	I	I
19	Seat Belt/Bracket					I			I			I	
20	Air Cleaner (Evaporator or Blowing Unit)		Every 12 Months or 20,000km, Whichever Comes First: “R”										
21	Headlamp				I		I		I		I		I
22	Tyre State/Pressure/Rotation	At Least, Check Tyre Pressure and Wear and Tear Monthly and Perform Tyre Rotation Every 10,000km.											

Maintenance Under Severe Conditions

When the vehicle is running under severe conditions, the following maintenance items should beperformed more frequently. Please refer to the maintenance intervals listed in the table below.

R: Replacement **I**: Inspection, Cleaning after Inspection, Adjustment, Servicing or Replacement when Necessary

Servicing Item	Servicing Operation	Servicing Interval		Traveling Conditions
Engine Oil & Oil Filter	R	Gasoline Engine	Every 5,000km or 3 Months	A B C F H J
		Diesel Engine	Every 3,000km or 3 Months	
Air Cleaner	R	More Frequent		C E
Spark Plug	R	More Frequent		B H
Timing Belt	R	Every 40,000km or 24 Months		D E F G
Brake Block/Brake Caliper/Brake Disc	I	More Frequent		C D G H
Rear Brake Drum/Brake Shoe	I	More Frequent		C D G H
Power Steering Gear, Interlock Device & Dust Boot	I	Every 10,000km or 6 Months		C D E F
A/C Filter (for Evaporator and Blower)	R	More Frequent		C E
Manual Transmission Fluid	R	Every 100,000km		A C D E F G H I J
Automatic Transmission Fluid	R	Every 40,000km		A C E F G H I

Severe Conditions:

A-Repeated short distance drive

B-Sustained curb idling or long-term intermittent drive

C-Drive under dusty conditions

D-Run on the road surfaces having saline matters or caustic matters or under freezing conditions

E-Run on sand

F-In half cases, running on the roads having traffic congestion or with ambient temperatures exceeding 32℃.

G-Run on downgrade.

H-The vehicle is towed or lifted.

I-Drive with the vehicle serving as a security patrol car, taxi cab, commercial car or trailer.

J-Run at the speed exceeding 170km/h.

Descriptions of Maintenance Items

Engine Oil & Oil Filter

Perform services at the time intervals listed in the periodic maintenance schedule. If the vehicle runs under severe conditions, change engine oil and replace oil filter more frequently.

Valve Clearance (Diesel Engine)

Improper valve clearance could result in poor control, too heavy noise, and output power reduction of engine. Check valve clearance and adjust it as required when the engine is hot.

Fuel Line & Joints

Check fuel line and joints for leakage and damage. If any part is damaged or leaks, immediately replace it.

⚠ Warning

Diesel engine: do not shut down the engine when the injection system is working or within 30s after the injection system works. The booster pump, connecting pieces, injectors, air pipes, etc. under high pressure will be exposed to higher pressure when the engine is shut down. The fuel spillage spattered to human body will result in serious injury. A person using a pacemaker should keep a 30cm or more distance from ECU and its wiring harness when the engine is running, because the heavy current in the shared line will produce a quite high electromagnetic field.

FuelFilter

Fuel filter clogging will restrict vehicle speed, damage exhaust system, and result in starting difficulty. If excess foreign materials are accumulated in the fuel tank, the fuel filter should be replaced more frequently.

After a new filter is installed, run the engine for several minutes, and then check the joints for leakage.

Vacuum Hose & Vent Hose of Crankcase

Check hose surface for fever or mechanical damage. Rubber is both hard and fragile, so, scratching, tearing, cutting, grinding or excessive expansion could result in tube wall breakage. Pay more attention to those hoses that contact or are very close to the components having high heat (e.g. exhaust manifold).

Check the flexible line to ensure that it does not contact any other heat sources, sharp objects or moving parts, so as to prevent thermal damage or mechanical wear. Check all hose connections (e.g. clips and couplings) so as to ensure safety and prevent leak. In case the signs of corrosion or breakage are found, immediately replace the components involved.

Fuel Hoses, Steam Pipes &Fuel Filter Cover

Check them at the intervals shown in the maintenance periods. Ensure that new fuel hoses, steam pipes and fuel filter cover are installed correctly. In case any problem arises, please consult a Refine dealer.

Air Cleaner

It is recommended to use acceptable genuine spare parts of JAC.

Spark Plug (Gasoline Engine)

Ensure that the spark plugs having a correct heat-resisting range are installed.

Drive Belt

Check all drive belts (water pump and generator) for rend, scratch, excessive wear or oil impregnation. If necessary, renew. Periodically check tension of drive belts. If necessary, adjust.

Engine Coolant

Change at the intervals specified in periodic maintenance requirements.

Timing Belt

Check the components related to the timing belt for damage or deformation and then replace the defective parts.

Timing Belt

Check the components related to the timing belt for damage or deformation and then replace the defective parts.

Manual Transmission Gear Oil

Check manual transmission gear oil according to the maintenance period table.

Brake Hose & Line

Check appearance for improper installation, wear, rend, corrosion or leakage. In case any component is found corroded or broken, immediately replace it.

⚠ Notice

In case the fuel level is too low, please check for leakage before refilling.

Automatic Transmission Gear Oil (if Equipped)

After the engine and transmission work normally, the transmission fluid level should be within the “Hot” range on the oil dipstick. When the engine is running, the transmission is set to neutral position, and the parking brake is applied, check the level of transmission fluid. When adding or changing automatic transmission fluid, please use DEXRON-II (MOBIL grade) or ATF SP-I (DIAMOND grade).

Fuel Injection Pump (Diesel Engine)

Fuel injection pump is the heart of a diesel engine, it consists of many precision components. Only proper maintenance can ensure normal working of the diesel engine and extend service life of the fuel injection pump.

1. The fuel injection pump is lubricated by diesel oil. Be sure to use GB252 compliant solar oil. It is strictly prohibited to use water-bearing diesel oil, because it could cause poor lubrication which will result in damage of fuel injection pump parts. During diesel oil fill, use clean container and tools to prevent entry of dust and soil.

2. After a 2,500km breaking-in running of a diesel engine on a vehicle newly delivered, clean or replace the fuel filter element. After that, replace it every 10,000km.

3. Often check tightness of fuel system circuit and carefully observe for local overheating or occurrence of abnormal sound.

4. Check fuel injection pump fastening bolts for looseness every 200 working hours of the diesel engine.

5. The fuel injection pump has been properly adjusted as required before delivery and lead seals have been added to related parts. It is strictly prohibited to remove the lead seals at will during use. Users can not disassemble or adjust the fuel injection pump assembly if they have not certain test conditions.

6. If the diesel engine will not be used for a long term, drain the diesel oil in void of the fuel injection pump and replace it with anti-rust oil.

Brake Fluid

Check that the level of the fluid in the brake fluid reservoir is between “MIN” and “MAX” marks on the reservoir. Only the liquid brake fluid that complies with SAEJI703 DOT4 value (corresponding to GBl0830-1998 JG4) can be used.

Brake Shoe, Brake Caliper & Brake Disc

Check brake disc for extreme wear intensity and brake caliper for brake fluid leakage.

Parking Brake

Inspect parking brake system components such as parking brake control lever and control cable etc..

Exhaust Connecting Pipe, Muffler & Suspension Bolts

Check tightness of exhaust pipe, muffler and suspension connections or check them for breakage.

Power Steering Gear, Interlock Device& Dust Boot

Park the vehicle and shut down the engine, and then check the steering wheel for too large free stroke. Check torsion extent of the interlock device or check it for breakage. Check the dust boot and ball pin for corrosion, rend or breakage, and then replace the broken parts.

Wheel Bearing Lubrication

Check wheel bearings and grease according to the maintenance period table. See the Service Manual for details.

A/C Refrigerant

Check A/C line and joints for air leak or damage.

Torque Inspection

After the first 5,000km travel of the vehicle, you can ask the special sale service shop of JAC Refine to help you check the torques at the key locations. After that, the key torques should be checked periodically.

External maintenance of the vehicle

The following maintenance description applies to all models of JAC Refine Xianghe, so, some equipments described in this section may not appear on your vehicle.

Periodic professional maintenance helps maintain value of your vehicle. In addition, it is one of the conditions for claim when body corrosion or paint scratching occurs.

We recommend that you use the clean maintenance materials checked and approved by us. The special service station of JAC Refine provide these materials. Be sure to notice the direction for use on the package during use.

⚠ Notice

►Maintenance materials abuse may do harm to your health.

►The maintenance materials must be properly kept all the time and keep children clear of them.

❀ **When purchasing maintenance materials, select the environmental-friendly products. The maintenance material garbage does not belong to domestic waste.**

Never wipe off dirt, clay or dust deposit when the vehicle surface is dry, nor can you use dry cloth and sponge to do this. Otherwise, paint or window glass of the vehicle could be damaged. Soak the dirt, mud or dust deposit with adequate water, and then clear it.

Washing vehicle

⚠ Notice

Damp and frozen brake could weaken braking function.

- Regular car washing and waxing treatment are the best way to protect your vehicle from environmental operation impacts.
- How long should your vehicle be washed or waxed depends on use frequency of your vehicle, parking conditions, season, weather conditions and environmental impacts.
- The longer the bird dung, insect bottoms, resin, road and industrial dust, and paint deposits stay on the roof, the greater damage they will bring. Strong sunlight irradiation will intensify the erosive attack.
- Washing your car weekly is necessary in the regions having comparatively serious pollution, but just waxing monthly is required.
- If salt has been used to prevent road freezing, be sure to thoroughly wash bottom of your vehicle.

Automatic Car Washer

Generally, using automatic car washer to wash the vehicle will not damage the body paint. The impacts to vehicle paint depends greatly on structure of car washing facility and species of car washing water filter, cleaning agent and maintenance agent, etc. If the vehicle paint is lusterless or it has scratches after car washing, you should immediately indicate the situation to operator of the car washing facility. If necessary, use another car washing facility.

Comments:

- Before an automatic car washing, make sure that all vehicle windows and skylight have been completely closed.
- To avoid damage, fold the rear view mirrors.
- In case some special parts such as spoiler, roof luggage rack and radio antenna etc., are equipped on the vehicle, you had best tell operator of the car washing facility.

Manual Car Washing

- Use adequate water to wet the soil first and then rinse it out as possible as you can.
- Then use a soft sponge, cleaning cloth or special brush to gently scrub your vehicle from up to down starting from the roof. Use of cleaning agent is required for obstinate dirt only.
- Thoroughly clean the sponge or sponge as quickly as possible after use.
- Finally, clean wheels, doorsills, etc. You had best use another sponge to clean these places.
- After the car washing, use fresh water to thoroughly flush your vehicle. You'd best wipe it up with a clean chamois.

Comments:

- Do not wash your vehicle under strong sunlight.
- If using a hose to wash your vehicle, do not let the stream directly shoot at door lock, door gap or cover plate gap; or otherwise, icing will occur there in freezing days.

⚠ Notice

- When washing your vehicle, be sure to turn off the ignition switch.
- When washing floor, underside of fender (wheel house) and hub cap, take care to prevent your hands from being scuffed by sharp metal edges.

High Pressure Car Washing Facility

- Be sure to strictly follow the operating instructions of the high pressure car washing facility to operate, especially the descriptions on pressure and spray distance. Do not use beam nozzle. The water temperature should not be above 60℃.
- To avoid damage to your vehicle, keep adequate distances from the soft materials (e.g. rubber hoses, plastic parts, insulation materials, etc.). When washing or painting the safety frame, keep an adequate distance from it too.
- Never use beam nozzle to wash the tyres. Damage will still be caused even with comparatively large spray distance and extremely short spray time.

Waxing

Favorable waxing can protect vehicle paint from environmental impacts and reduce the damage occurred when the body is slightly hit to minimum.

Daub with hard wax antiseptic substance immediately when the beads on the body do not drip any longer. In case cleaning antiseptic substance is used periodically, it is also recommended to perform hard wax protection for your vehicle semiyearly at least.

⚠ Notice

It is recommended to wax your vehicle after 6 months of use.

Glazing

Glazing is required only when the vehicle paint becomes dim and use of waxing material can not make it become more lustrous. In case the glazing agent used does not contain any antiseptic ingredients, be sure to perform a waxing treatment subsequently.

The lusterless parts and plastic parts can not be treated using glazing agent or hard wax.

Vehicle Paint Damage

Minor vehicle paint damages, such as scrape, scratch or stone percussion mark, should be covered with vehicle paint before rusting as soon as possible. In case rust has appeared, be sure to thoroughly clear it. Subsequently, daub this location with antiseptic primer and then daub it with covering paint. Have these jobs done at the special service station of JAC Refine.

Window Glass

- You'd best remove the snow on glasses and side mirrors of your vehicle manually.
- Use a soft plastic ice scraper to remove the ice on glasses and mirrors. Use of ice-melting agent will bring better effects.
- When using the ice scraper, do not allow the scraper to scrape to and fro. Scrape along one direction only.
- Do not use hot water to clear the ice and snow on glasses or side mirrors; otherwise, the glasses may split.
- Rubber, oil, grease or silicone residue can be cleared using glass cleaner or silicone cleaner.
- Wax can be cleared using special cleaner only. Consult the special service station of JAC Refine for detailed information. Inside faces of window glasses should also be cleaned periodically.
- Do not wipe the glasses using the leather used to wipe the body paint, because the wax residue could damage the glasses.
- To avoid damage to the heating wire on rear window glass, do not stick any articles to the heating wire.

Doors, Luggage Boot, Roof & WindowWeather Strip

Often use rubber maintenance agent (e.g. silicone spray agent) to process the rubber weather strip, which can maintain elasticity and extend service life of the strip to render better sealing action. In addition, this can avoid premature wear of the weather strip and prevent leakage and too high door closing effort. Namely, the weather strip will not freeze even in winter.

Antiseptic Treatment to Cavity

Endurance protection to all cavities liable to corrosion hazards on the vehicle have been performed by the manufacturer.

The antiseptic treatment requires neither inspection nor post treatment. In case some hard wax flows out of any cavity under the action of exterior high temperature, use a plastic scraper and washing gasoline to clear.

❀ **When clearing the hard wax flowing out using washing gasoline, pay attention to the regulations on safety and environmental protection.**

Wheels

Hub cap and wheel trim board should be washed at the same time during periodic car washing to prevent brake fine abrasive particles, soil or spattered salt from consolidation on them. The obstinately adhesive brake fine abrasive can be cleared using industrial dust remover. The damaged protective paint should be made up before rusting.

⚠ Notice

When cleaning the wheels, please pay attention that damp, frozen and spattered salt could affect braking!

Chassis

Though the vehicle bottom has been specially processed, shielding damage during running is unavoidable. It is recommended to check the protective layers at bottom and chassis of your vehicle. If necessary, repair. Have the repair work and additional antiseptic steps done by the special service station of JAC Refine.

⚠ Notice

Do not use the antiseptic materials attached to chassis protective layer or used on exhaust muffler pipe, exhaust pipe, catalytic purifier or thermal baffle. These substances may catch fire when the vehicle is running.

Internal Maintenance of the Vehicle

Plastic Parts, Instrument Panel & Artificial Leather

These components can be cleaned using clean wet cloth. In case the effects are dissatisfactory, it is recommended to use the plastic cleaner and maintenance agent not containing solvent.

The cleaner containing solvent could corrode the component material.

⚠ Notice

►Never use the cleaner containing solvent to clean the instrument panel and the air bag module surface.

►The cleaner containing solvent will penetrate to make the surface loose. When the air bag is released, this loose plastic part will be obviously subjected to the hazards of damage.

Interior Trim Materials and Textile Facings of Carriage

The interior trim materials and textile facings of doors, luggage boot and roof can be cleaned using special cleaner or dry soft foamy brush.

Genuine Leather Seats (if Equipped)

•Do not expose the genuine leather to strong sunlight for a long period of time; or otherwise, it will discolor.

•Be sure to remember that the genuine leather can not be processed using solvent, floor wax, shoe polish, detergent and similar supplies at any time.

•To avoid damage, please have the obstinate smirches cleared at a professional service station.

•We recommend that you maintain the seats using genuine leather maintenance agent semiyearly under normal service conditions.

•Use a wet cloth to clean the genuine leather surface. Use soft soap liquid to clean the places where are very dirty. Be sure to take care not to allow water to leak in from the stitches. After cleaning, use a soft dry cloth to mop it up.

Safety Belt

•Keep the safety belts clean. If a seat belt is very dirty, its functions will be affected.

•A dirty safety belt can be cleaned using soft soap liquid only and can not be removed from the vehicle.

•An automatic safety belt can be retracted only when it is fully dry.

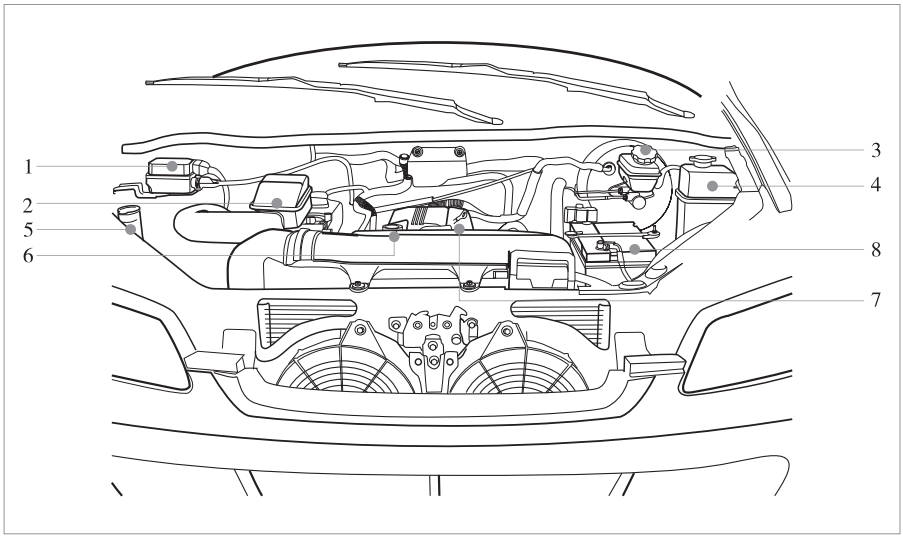
⚠ Notice

►Do not remove the safety belt to clean.

►Do not use chemical cleaning agent to clean the safety belt, because the chemical cleaning agent could damage the fabric. Also, do not allow the safety belt to contact corrosive liquid.

►Periodically check the safety belt. If any safety belt fabric, safety belt connector, automatic retractor or locking element is found damaged, be sure to have the defective safety belt replaced at an authorized service station of Refine.

Refine Engine Compartment



1. Cruise Control Module (if Equipped)
2. Air Cleaner
3. Brake Fluid Reservoir
4. Engine Coolant Reservoir
5. Windshield Washer Fluid Reservoir
6. Engine Oil Filler Port
7. Oil Dipstick
8. Battery

Cleaning and Antiseptic Treatment of Engine Compartment

⚠ Notice

►Before working in the engine compartment, please be sure to notice all related descriptions in this section.

►For the sake of safety, take off the ignition key before contacting the water collecting sump; otherwise, motion of the wiper may cause injury if it is turned on inadvertently.

•Leaves and foreign matters, etc. falling into the water collecting sump should be cleared without delay. This can avoid water outlet clogging and prevent foreign materials from entering inside of the vehicle from A/C ventilation facilities.

•Antiseptic treatment has been performed for external surfaces of the engine compartment and power train in plant. In case salt is used to prevent freezing in winter, thoroughly clean the whole engine compartment and water collecting sump and then perform antiseptic treatment subsequently to prevent erosive attack of salt.

•Before washing the engine, be sure to turn off the ignition switch. Do not direct stream to headlamp directly.

•If the engine compartment has been cleaned or the engine has been washed using grease solvent before, the anticorrosive coating on the engine must has been cleared together. Thus, antiseptic treatment must be performed on all surfaces, grooves, joints and the assemblies in the engine compartment to bring durable non-corrodibility to them. This requirement also applies to replacement of the assembly components requiring antiseptic treatment.

❀ **When cleaning the engine, the residual gasoline, grease and engine oil will flow out together. An oil water separator must be used to clear the filthy water, so, the engine can be washed at an authorized service station of Refine only.**

•The special service station of JAC Refine have the cleaners and antiseptic substances recommended by the manufacturer and are equipped with the facilities required.

•During the operations at the engine or in the engine compartment, for example, when checking and refilling with hydraulic fluid, scald and other injuries may occur and the risks of accidents and fire exist. Therefore, extra care must be taken.

❀ **When filling with hydraulic fluids, be sure to ensure that they will not be confused each other; otherwise, serious malfunction could occur.**

⚠ Warning

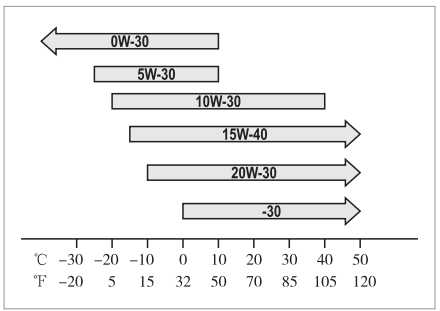
Extra care should be taken during working in the engine compartment. In case you notice that steam or coolant is overflowing, never open the engine hood or perform any operation to the engine. Scalding hazard! Do not operate until steam or coolant does not overflow any more and the engine has cooled down.

Checking Engine Oil

Selection of Engine Oil

Diesel Engine

•Select the SAE viscosity compliant engine oil according to free air temperature. See the table below for the viscosity values recommended.



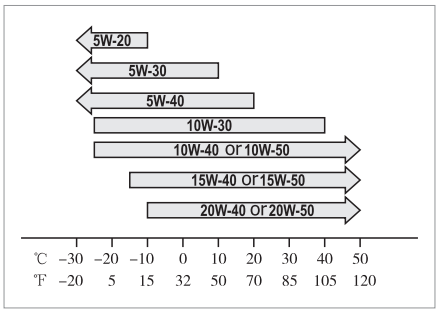
Note: for a diesel engine, SAEOW-30 only applies to use in the regions with temperatures at 10℃ (50) or below. When free air temperatures are 0℃ (32) or below, do not use SAE30 which only applies to the regions with free air temperatures at 0℃ or above.

•The quality of the engine oil should conform to the API criteria for classification: 2.5 4D56 TCI: CF-4 and above.

•The quality of the engine oil should conform to the ACEA criteria for classification: 2.5 4D56 TCI: B2 or B3.

Gasoline Engine

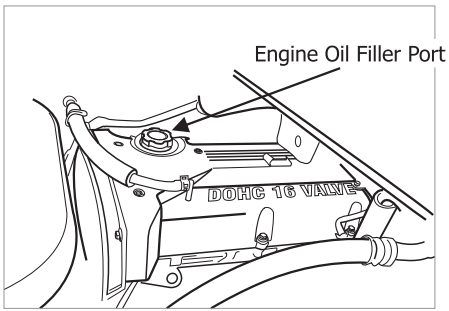
•Select the SAE viscosity compliant engine oil according to free air temperature. See the table below for the viscosity values recommended.



Note: for a vehicle that is running at high speed for a long period of time, use of SAE5W20 is not recommended.

•The quality of the engine oil should conform to the AP criteria for classification: SE and above.

Checking Engine Oil Level

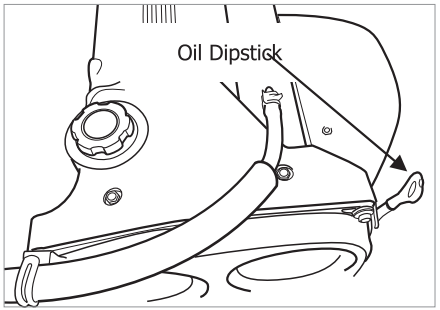


⚠ Notice

Please pay attention to the safety instructions when you operate the engine or work in the engine compartment.

Engine oil consumption of the engine is normal. The engine oil consumption rate can be up to 1.0L/1,000km. Therefore, be sure to periodically check the engine oil level. You'd best check it before each fuel refill and long-distance travel.

Refer to the engine compartment diagram for position of the oil dipstick.



- When checking the engine oil level, be sure to park the vehicle flatly. Wait several minutes after the engine is shut down to allow engine oil to return to inside of the oil pan.
- Then draw out the oil dipstick, mop it up with a piece of clean wiping cloth, and re-insert it back until stopped.
- After that, draw out the oil dipstick again to read out the engine oil level position.
- The engine level should maintain between “F” and “E” on the oil dipstick.

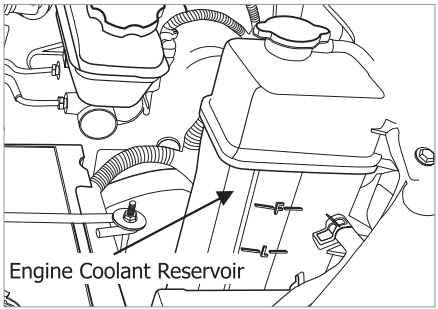
Refilling Engine Oil

- When the engine oil level approaches to “E” or is below that position, duly refill with engine oil.
- The engine oil level should not exceed “F” position in any case, or otherwise, engine oil will be aspirated through the crankcase vent and discharged into atmosphere through the exhaust system. Engine oil may combust in the catalytic purifier and damage the device.

Checking Engine Coolant

⚠ Warning

Do not open the radiator cap when the engine is hot, because the cooling system is then under high pressure and ejection of hot coolant could result in serious scald.



- The coolant reservoir is located in the engine compartment and renders a translucent form.
- When the engine is hot and idling, the coolant level should be between “L (Low)” and “F (Full)”.

The cooling system is close, so, it has little leak. Visible fall of the coolant level indicates potential leak. In this case, immediately ask an authorized sales and service store of Refine to inspect your vehicle.

- If the level falls to “L”, please add coolant. Also, screw off the radiator cap if the coolant reservoir is fully empty, and then add coolant until the level reaches the filler bottle neck.

Engine Coolants Recommended

Use the mixture consisting of high quality ethylene glycol engine coolant and water equally in ratio. Engine components contain aluminum alloy. The coolant should be suited to these components and no additional antiseptic substance is required. Using the coolant of correct consistency and type will protect the engine cooling system from freezing and corrosion. Consistency of the coolant should be 35%~60%, or otherwise, the engine cooling system could be damaged. Do not replace the coolant with light water even in Summer. When adding or changing the coolant, refer to the table below for its consistency:

Ambient Temperature ℃ (ºF)	Consistency of Engine Coolant	
	Antifreeze	Water
−15(5)	35%	65%
−25(−13)	40%	60%
−35(−31)	50%	50%
−45(49)	60%	40%

Coolant Change

Periodically change the coolant according to the regulations in the vehicle maintenance schedule.

⚠ Notice

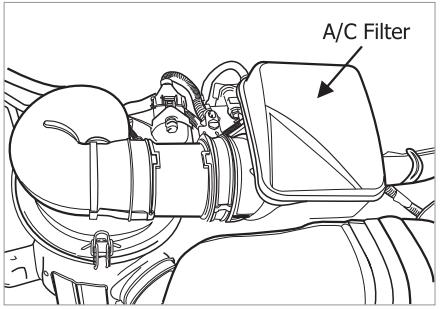
In case the engine coolant is spattered on the vehicle, clean it up using fresh water completely. The engine coolant is caustic and could damage surface glossiness of the vehicle.

⚠ Warning

The cooling fan of the engine is controlled by coolant temperature. Sometimes, the cooling fan will still work after the engine is shut down. Extra care should be taken when you are working near the cooling fan blades so as to avoid injury. Under normal condition, the cooling fan will automatically stop after the engine temperature drops.

1. Park your vehicle on a level road surface and pull up the hand brake. Take off the radiator cap after the engine cools down.
2. Properly place a container for accommodation of the antifreeze, open the water drain valve on the radiator to drain the engine coolant, and then close the water drain valve.
3. Add appropriate coolant to the radiator according to the instructions of the manufacturer on the engine coolant reservoir.
4. Turn the radiator cap counterclockwise until tight. This will relieve the pressure retained in the cooling system. Then take off the radiator cap and add softened water or distilled water until the level reaches the radiator opening.
5. Cover the radiator cap and check that the water drain valve is properly closed without leakage.

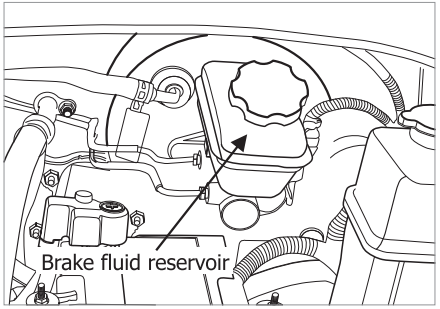
Checking and Replacing A/C Filter



The A/C filter (evaporator and blower unit) is located in the inlet channel behind the windshield washer fluid. Follow the steps below to replace it:

1. Open the engine compartment cover.
2. Take off the clamp on the inlet channel.
3. Replace with a new A/C filter.
4. Follow the reverse order to install the A/C filter.

Checking Brake Fluid



The brake fluid level must be always between “MAX (Maximum)” and “MIN (Minimum)” marks. The level will slightly drop during running due to wear and automatic adjustment of brake block, which is normal.

But if the fluid level in the container visibly drops or drops to below the “MIN” in a short time, the brake system may be poorly sealed. In case the brake fluid level in the storage container is too low, the situation will be indicated by flashing of the brake system indicator lamp. Then please drive to the special service station of JAC Refine immediately to have the brake system on your vehicle inspected.

Changing Brake Fluid

- The brake fluid can absorb moisture, so, it may absorb the moisture in the surrounding air with time lapse.
- Too high water content in the brake fluid will cause long-term corrosion damage to the brake system. In addition, boiling point of the brake fluid will visibly drop. Therefore, be sure to change the brake fluid biyearly.

⚠ Notice

►If the brake fluid has been used for an extended time, bubbles will be produced in the brake system under extremely high braking load, which will greatly reduce braking efficiency and running safety.

►The brake fluid is poisonous, so, it should be kept in the original sealed container and particularly keep children away from it.

►Take care to prevent the brake fluid from corroding the vehicle paint.

•When changing the brake fluid, use the genuine brake fluid for JAC Refine in original package only (please consult the special service station of JAC Refine for its type). The brake fluid must be brand new and not unsealed for use.

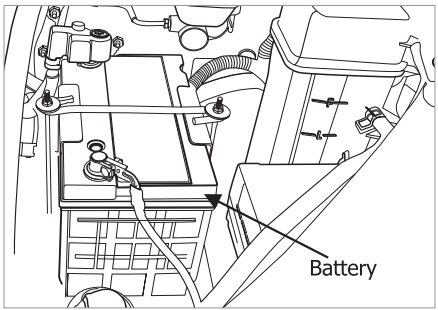
•As a consequence of technology, brake fluid change requires special tools and necessary professional knowledge. We strongly recommend that you have the brake fluid changed at the special service station of JAC Refine.

Note: it is recommended to change the brake fluid during maintenance.

Checking Battery

⚠ Warning

The battery is hazardous! High consistency strong acid solution is contained in liquid in the battery, so, it is poisonous and highly caustic. When operating the battery, please carefully read the preventive measures below to avoid injury.



•When opening the battery, wear safety goggles and gloves. Do not allow the acidic or leady particles to fall into your eyes or on your skin or clothes.

•Do not invert the battery, or otherwise, acid liquor may flow out of the exhaust port. If acid liquor is spattered into your eyes, flush several minutes using fresh water immediately and then see a doctor at once. If acid liquor is spattered on our skin or clothes, neutralize it with strong soap lye immediately and then wash with abundant water. If you drink acid liquor by mistake, immediately see a doctor.

•Open flame, electric spark, glare and smoking are forbidden when you operate the battery. When handling cables and electric equipment and removing static load, avoid generation of electric sparks.

Never short the battery; otherwise, high energy electric sparks will be generated, which will cause the risks of injury.

•Explosive mixture will be generated during battery charge.

•Keep children away from acid liquor and the battery.

•Before working on electric equipment shut down the engine and turn off the ignition switch and all electric equipment. Remove battery negative cable. When replacing a bulb, only turning off lighting is required.

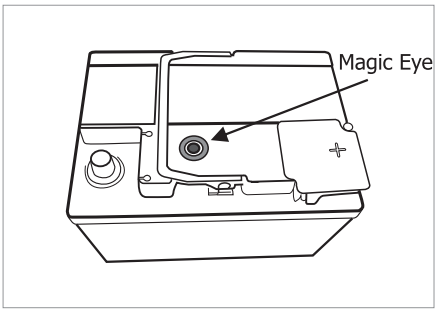
•Before disassembling the battery, disable the anti-theft warning device, or otherwise, the warning device will give off an alarm.

•When removing the battery, remove the negative cable first and then the positive cable.

•Before cutting in the battery again, turn off all electric equipment. Connect positive pole first and then negative pole. Never connect the cables in a wrong way; otherwise, the risk of fire will occur.

•Do not disconnect the battery when the ignition switch is turned on or the engine is running; otherwise, the electric equipment (electronic module) will be damaged. To protect the battery case from ultraviolet irradiation, do not expose the battery under sunlight.

The Battery with Magic Eye (if Equipped)



There is a rounded observation window on upside surface of this kind of battery. This “magic eye” can change color according to charging state of the battery or acid liquor level. Bubbles will distort the color shown, so, carefully pat the magic eye before observation. In case the observation window shows no color or faint yellow, it indicates that the battery acid liquor level is too low. Then please drive to the special service station of JAC Refine to have the battery inspected. In case blue is shown, it indicates that the quantity of electric charge of the battery is comparatively high. In case black is shown, it indicates that the quantity of electric charge of the battery is deficient. Then you should immediately charge it.

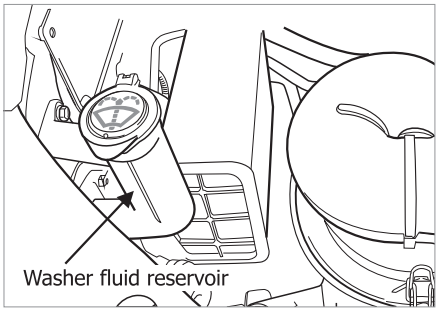
Checking Spark Plug

The spark plugs should be replaced within the specified cycle in the regulations on service and maintenance of the vehicles manufactured by our company.

If the change cycle is reached, be sure to replace them. Pay attention to the following points during replacement:

- The spark plugs and ignition system of the engine have been matched, which helps reduce harmful substances in the exhaust. To avoid exhaust emission exceeding standard or working troubles, engine damage and running troubles caused by the non interference free spark plugs, use the original package spark plugs appointed by JAC Refine. Particularly, number of electrodes, heat value and anti radio interference are important.
- As a consequence of technology, the spark plugs may change. Therefore, we recommend that you use the spark plugs obtained from the special service station of JAC Refine only.

Checking Windshield Washer Device



Washer Fluid Reservoir

Refer to the engine compartment illustration for position of the windshield washer fluid container. The fluid for the rear windshield washing device is supplied by a separate washer fluid reservoir. Capacity of the windshield washer fluid container is labeled on the washer fluid reservoir.

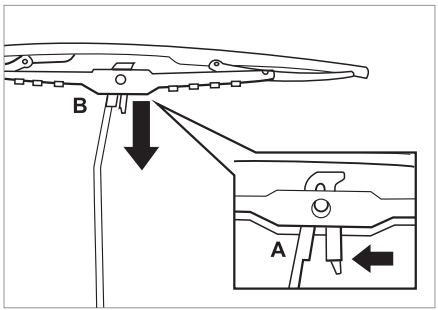
We recommend that you add windshield cleaner in water. Single use of fresh water can not clean the windshield quickly and effectively. The windshield cleaner has extremely strong cleaning and anti-freezing capacities and can be used perennially.

Checking and Replacing Wiper Blade

In case grating from a wiper blade is heard, the following may be the causes:

- During car washing on an automatic car washing facility, hard wax bottoms condense on the front windshield. This kind of hard wax bottoms can be cleared using special cleaner only. Please consult the special service station of JAC Refine for detailed information.
- Adding the windshield cleaner that can dissolve paraffin can remove this kind of grating. The cleaner that can dissolve grease can not clear this kind of deposit.
- If the wiper blade is damaged, the grating will also occur. Then replace the wiper blade.
- In case orientation angle of a wiper arm is incorrect, you can drive to the special service station of JAC Refine for inspection. If necessary, adjust.

Replacing Wiper Blade



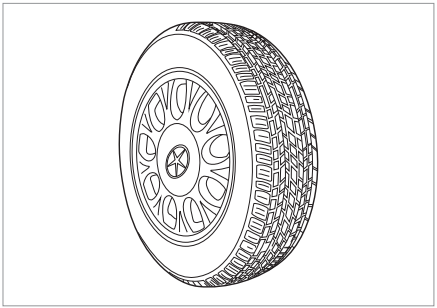
- Take off the wiper blade.
- Invert the wiper arm to detach it from the glass and make the wiper blade normal to the wiper arm
- Draw out the wiper blade from side according to model of the wiper or follow the steps below as shown in the figure:

Compress the safety spring along the direction of arrow A .

Detach the wiper blade along the direction of arrow B, and then remove it from the arm along the reverse direction.

Follow the reverse order to install the wiper blade.

Checking and Replacing Wheels



⚠ Notice

A new tyre must go through a “running in”, because it does not reach the optimal cohesive performance in its initial stage of use. Carefully drive at moderate speeds in the initial 500km. Favorable running in helps extend service life of the tyre.

Description to the Tyres Having a Specified Traveling Direction

The tread relates to the direction of travel (there is an arrowhead indicating the traveling direction on flank of each tyre). Be sure to observe the specified direction of travel. This can maintain the best performances in the aspects of horizontal drift, road surface adhesion, noise and wear.

•Tread depths of new tyres vary with structure features and tread forms depending on types and manufacturers.

•Often check the tyres for damages (pricking, cut, splitting and bulge) and clear the foreign materials embedded in the tread. Fit the missing valve core dust cap immediately.

•To avoid damage to the tyre and hub, slowly put over against the obstacle as possible as you can when meeting a curb and similar obstacles.

•Damages of tyre and hub are often hidden. Abnormal vibration and vehicle deflection indicate that a tyre may be damaged. If you suspect that a tyre is damaged, immediately slow down. Check the tyre for operation status (bulge and crack). If no external damage is seen, please drive slowly and carefully to the nearest special service station of JAC Refine for a total inspection of your vehicle.

•Keep wheels clear of engine oil, grease and fuel.

•Before removing a wheel, properly mark on it and keep it at the former rolling direction during reassembly.

•After a wheel and tyre is removed, store it at a cool and dry place where is protected from light in so far as possible.

Service Life of Tyre

Service life of a tyre generally depends on the following factors.

Inflation pressure of tyre

•The inflation pressure of a tyre for summer use is marked on inside face of the filler cap. The inflation pressure of a tyre for winter use is 0.2 bar higher than that of a tyre for summer use. Especially during running state adjustment, inflation pressure of tyre is a very important parameter. Therefore, please check tyre pressure at least monthly and check it also before each long-distance travel. At the time, do not forget the spare tyre:

•The inflation pressure of the spare tyre should be the maximum value specified for the vehicle.

•The inflation pressure of an emergency use spare tyre (if equipped) is 280~320kPa.

•When checking tyre pressure, the tyre must be under cold state. Do not reduce the high pressure caused by temperature rise of the tyre. If load of the vehicle varies greatly, adjust the tyre pressure accordingly.

•Too low or too high tyre pressure will cut service life of a tyre and will affect running performance of the vehicle.

❀**Too low tyre pressure will increase fuel consumption, unnecessarily increasing environmental pollution.**

Check air pressures of all tyres when the tyres have completely cooled down. Follow the air pressure standard indicated on the tyre pressure label inside left front door of the driver's compartment, if deficient or exceeding the specified value, adjust. After the adjustment, check for breakage or air leak.

Tyre size	Pressure Intensity (kPa)	
	Front	Rear
205/70R15	280~320	280~320
215/70R15	250	250

Drive Mode

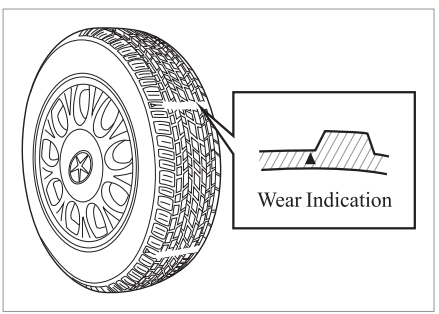
Fast running on a curve, sharp acceleration and hard braking can deteriorate wear of tyres.

Dynamic Balance of Tyre

Dynamic balance of each tyre on a new vehicle has been checked. But various impacts during running will make the tyre off balance thus causing steering vibration.

Then re-check dynamic balance of the tyre because unbalance of wheel will also increase wear of steering mechanism, linkage mounting of wheels and tyres. In addition, re-check dynamic balance of a wheel after each replacement and repair of its tyre.

Wear Marks of Tyre



There are 1.6mm depth wear marks in the direction normal to the direction of travel at tread bottom of a new tyre. There are 6-8 this kind of wear marks depending on products. The marks are evenly distributed on circumference of the tyre.

When the tread depth measured out on the tread groove beside a wear mark is 1.6mm, the official minimum specified value has been reached and the tyre should be replaced immediately.

⚠ Warning

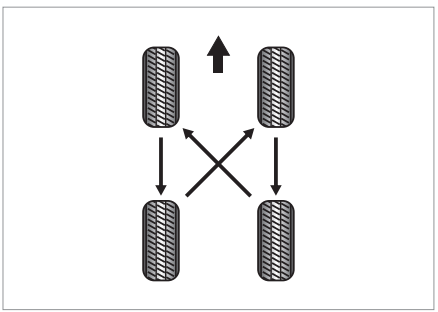
►At the latest, immediately replace the tyre without delay when it has been worn to the wear mark.

►A seriously worn tyre will weaken the adhesive force between the tyre and the ground, especially when the vehicle is running at high speed on a damp road surface. In addition, it will cause premature water floating of the vehicle.

►Use of an excessively worn or under inflated tyre will raise accidents and cause personal injury.

Wheels Rotation

Rear wheels are liable to wear after a long-term travel. To keep balance between wear of tyres and extend their service life, transpose the wheels according to the order shown in the figure. Drive your vehicle to the special sale service shop of JAC Refine for proper adjustment.



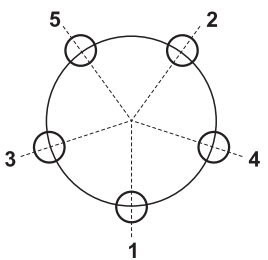
Wheel Bolts

Tightening torques of the wheel bolts are 150~200N.m.

Be sure to keep all wheel bolts clean and easy to rotate. Do not coat them with grease and lubricant in any case.

⚠ Notice

In case tightening torques of the wheel bolts are too low, the bolts will loosen during running to bring the risks of accident. But too high torques will damage the wheel bolts and screw threads.



Replacing Tyre and Hub

Tyre and hub are important structural parts. Therefore, you should use the tyre and hub approved by us to match them with characteristics of this vehicle so as to ensure favorable cohesive performance and safety.

The special service station of JAC Refine will provide the tyre information approved by us. The authorized service stations of Refine will also provide abundant tyre and hub products.

- For the sake of safety, the tyres should be replaced in pair other than singly. Always install the tyres having deeper tread to front wheels.
- Only install the radial-ply tyres of the same structure and size (rolling perimeter) to all four wheels and use the same tread as possible as you can.
- If size of the spare tyre is different from that of the tyres used on the vehicle (e.g. the tyres for winter use or wide tyre), use the spare tyre for a short time only when a malfunction occurs. In addition, drive carefully and replace it with a standard tyre as soon as possible.
- An old tyre that you do not know its former service condition should not be used.
- Understanding tyre marks and their meanings can help us select correct tyre type. A radial-ply tyre has the following labels on its flank:

For example: 215/70 R 15
215 = tyre width (mm)
70 = aspect ratio (%) of tyre
R=label indicating a radial-ply tyre (Radial)
15 = diameter of hub (inch)

The date of production is also labeled on flank of the tyre (maybe at inside of the wheel only):

DOT…1801… indicates that the tyre is manufactured in the 18th week in 2001.

⚠ Notice

A tyre of which the service life exceeds 6 years can be used under emergency only. In addition, extra care should be taken during running.

Emission Control System

In case your vehicle is equipped with non original package wheels and tyres, pay attention to the following items:

⚠ Notice

►As a consequence of technology, generally the wheels of other vehicles can not be used. In some cases, even the wheels of the same model can not be used.

►If you are using the tyres or wheels other than those suited to your model and approved by us, running safety will be weakened.

►The wheels and the wheel bolts match each other in structure-when replacing with other wheels, be sure to match the wheel bolts and nuts having corresponding length and correct ball socket shape. Tightening of the wheels and functions of the arresting device depend on this.

Normal operation of the emission control device plays a decisive role in environment-friendly running of the vehicle.

Therefore, pay attention to the following points:

•The vehicles with catalytic purifier can use unleaded gasoline only.

•The vehicles with catalytic purifier can not run with fuel in the fuel tank used up. Irregular fuel supply may result in misfire, which means that the unfired fuel will enter the emission system to cause the catalytic purifier to overheat and be damaged.

•In case misfire, power drop and unsteady operation occur during running, the ignition system may be malfunctioning. In this case, the unfired fuel may directly enter atmosphere. In addition, the catalytic purifier will be damaged due to overheating. Then you must slow down immediately and drive to the nearest service station for troubleshooting.

•Do not overfill with engine oil.

•Do not run the vehicle more than 50m when started up by tow.

⚠ Notice

►Temperature of the catalytic purifier may be high when the vehicle is running on a bad road surface or under an abnormal driving condition. Take care to keep the catalytic purifier clear of combustible materials during parking.

►Do not use the additional bottom board protective materials or antiseptic substances on exhaust elbow and exhaust pipe, catalytic purifier or thermal baffle. These materials may combust when the vehicle is running.

Three Way Catalytic Converter

This device can convert the harmful gases in tail gas of the vehicle such as CO, HC and NOx to the harmless substances such as CO2, water and N2 through oxidation and reduction actions.

Comments:

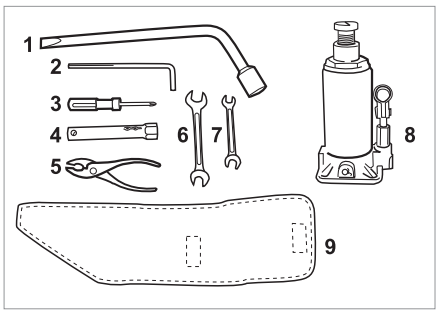
Even an exhaust gas purifier working normally can produce sulphur bearing exhaust gas under certain engine operating mode. At the time, selection of the high-class unleaded gasoline of other brands or gasoline stations may help.

5 Emergency

Replacing Spare Tyre 121
Fuse 127
Fire Extinguisher (if Equipped) 128
Traction Vehicle 129
Emergency Start 133
Engine Overheating 135

Replacing Spare Tyre

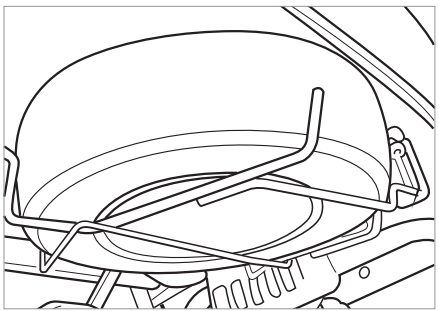
Tools Introduction



1. Wheel-nut Wrench Pliers
2. Dowel Bar
3. Dual-Purpose Screwdriver
4. Sleeve
5. Combination Pliers
6.7. Double-headed Wrench 10×12
8. Hydraulic Jacks
9. Tool Kit

Toolbox is on the right back of the luggage compartment. The backup tools provided by JAC are shown as the right figure.

Spare Tyre



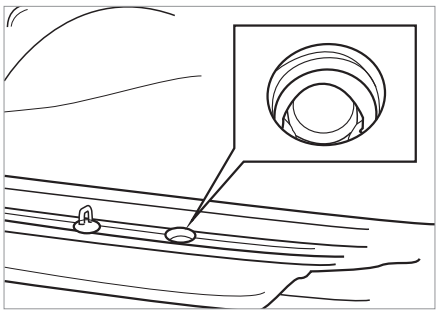
Regularly check spare tyre pressure to ensure that it will be available in the emergency. To maintain its maximum pressure to meet the requirements, so that under any conditions is available.

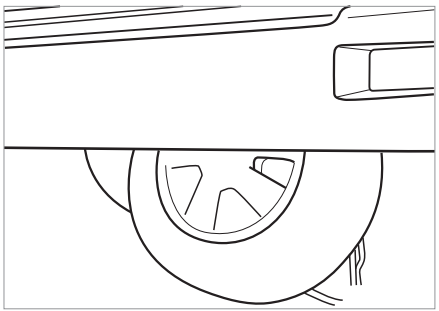
Note: Spare tyre is at the bottom vehicles back.

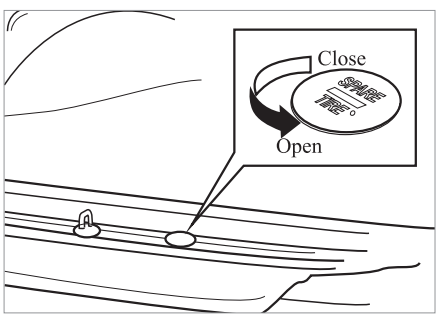
Removing Tyre

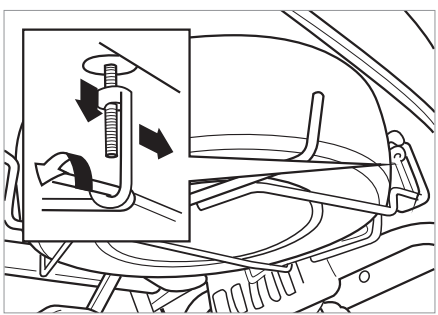
Spare tyre can be removed through following steps:

1. Open the back door.
2. Remove the plastic cover.
3. Using wheel-nut wrench pliers to loose the hang-installed bolts counterclockwise.
4. To make it detached from the hook, and then get down hanging slowly and removed the spare tyre.









Installing Spare Tyre

Install spare tyre in the reverse sequence.

Replacing Tyres

It takes place tyre rupture or leakage when driving:

1. When moving straightly, left foot accelerator pedal to slow vehicles stopped at the roadside. Do not immediately to brake or attempt to stop on the roadside, thus it would lose control of the vehicle. As far as possible to make it at the roadside and park on solid level of the road.

2. When the car stopped well, open hazard warning lights and make the parking brake system available. Then push the transmission control lever onto the "P" position (automatic transmission) or reverse (manual transmission). The next is to place the triangle signal-indicated board.

3. Make all passengers get off and ensure that they are away from hazard.

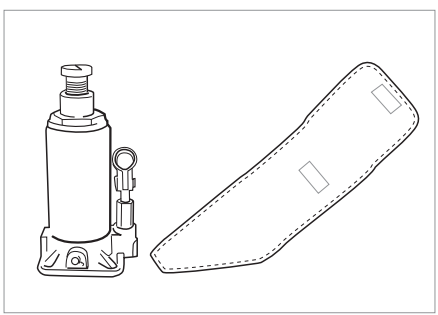
4. Replace the tyre according to the following guidance.

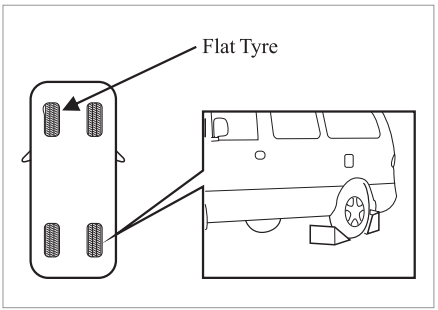
The following procedure can be used as tyre transposition, also as replacement flat tyre. Before replacement, it shall be checked to ensure that the transmission control lever has been on the "P" position (automatic transmission) or reverse (manual transmission) and the parking brake system has been available.

In case of replacement for the tyre rupture, in order to avoid the hazard of vehicle parts to person, it should stop the vehicle on the level road without traffic risk and then carry out the replacement.

1. To Take Out the Spare Tyre and the Tools:

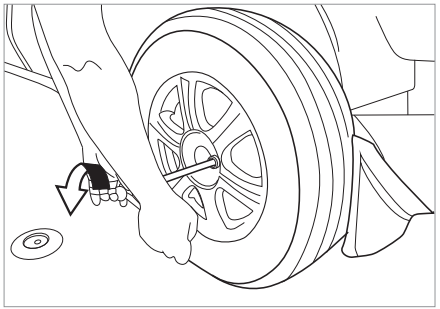
Unloading the spare tyre down and taking out the jacks and spare kits.





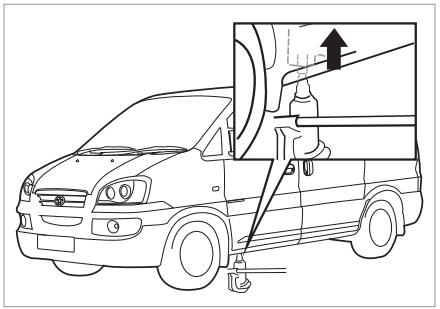
2. Block Wheels

When the vehicle is jack up, in order to prevent vehicles from falling, it is necessary to underlay obstruction block under the diagonal tyre.



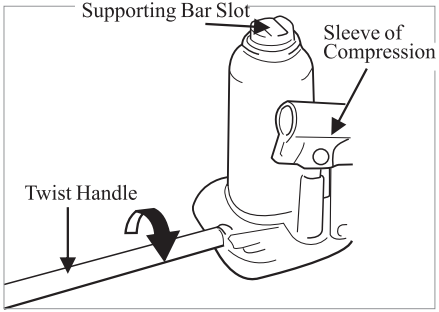
3.Loose the Wheel Nuts

Before the car is raised up, rotate the wrenches counterclockwise. Upon operation, it shall confirm that the sleeve has covered the nut fully without sliding. In order to obtain the greatest leverage is that put the wrench handle on the right side (as shown in the above figure), then grip the handle end and move it as uniformity. At this time, do not remove nut, a half-circle can be loosed.



4. Place Jack

If it is necessary to replacement tyre and installment tyre chain, it needs to raise vehicle up and place the jack on an appropriate position as shown in the above figure to avoid damage to the car body.



5. Support Vehicles

Using the jack handle to rotate the relief valve clockwise till it stands in the end. Then putting the handle into the sleeve, and make the keyway of the handle and the slot of the sleeve well. The next step is to shake the handle from top to bottom to uplift the car sufficient height for installation the spare tyre.

⚠ Notice

►Please use the original jack. And the jack can only be used to replace the wheel.

►Please place the jack on hard level road.

►Don't rotate the jack counterclockwise more than 2 times, otherwise it can make the jack leak oil and unavailable again.

►Hydraulic jack and it has two kinds of its mandrill. When all of its mandrills are raised up and the stop mark (yellow paint line) of the upper mandrill can be seen, it should stop immediately to rise otherwise the jack would be damage.

►It must be careful when using jack, and pay attention to whether there is person at the bottom or inside of the car.

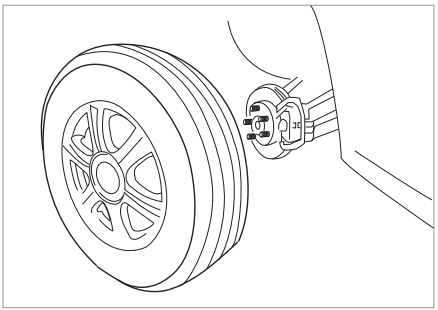
►The supporting height is as high as the tyres can be a little off the ground, or it would be very high risk.

►Jack skidding will be very dangerous. So don't make vehicles to maintain the uplift of the state for a long time. Don't shake the car when put up.

⚠ Warning

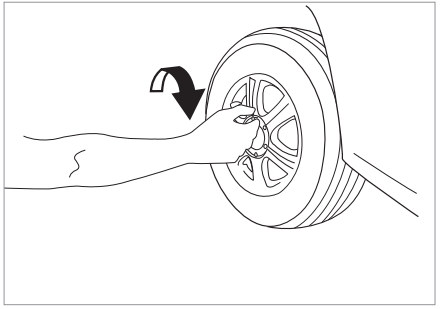
►When using jacks to support the vehicle, don't enter the bottom of the vehicle because it is very dangerous. The car may be missing causing serious injury or death. At the same time there must be no body inside of the car.

►Since sharp edge of hubcap, to be careful to avoid scratches. Before installation of the wheels, it should confirm the wheels clean and without dirt, gravel, asphalt, etc. Otherwise, it will affect the fastening of the wheel installation. Using duster cloth and water clear the waste and debris off if having. If not having good contact between the wheel and hub, it will lead to the tyre nuts more and more loose even loss. Thus wheel loss will lead to losing control of the vehicle, causing serious casualties.



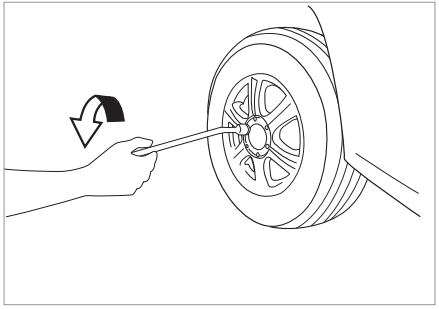
6. Replacement Tyre

Loose the nuts of the tyre by using the wrench and remove it down by hand. Then to take out the hub and remove from the bolt slide down, place it on the level road to avoid rolling off. And then put up the spare tyre and to the mounting holes and the hub bolts, and push it down to the hub bolts. If hard to operation, it may make an upper hole of the tyre on an upper hub bolt, then to sloshing the tyre to make each of them in place.



7. Re-Fasten Tyre Nut

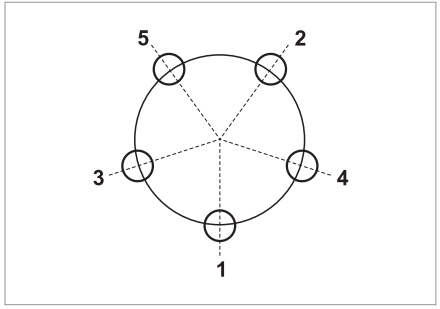
After finishing installing the hubcap, twist the nuts on the bolts, and shake the tyre to confirm that all of the nuts have been capped on the bolts, then screw down all of them tightened again.



8. Put Down the Car and Screw Down the Nuts Tightened

To put down the car body and place the wrench as shown in the above figure to fasten the nuts. It should ensure that the sleeve caps the nut completely.

Don't trample on the wrench handle or use lengthening pipe to cover the wrench handle. Twist all of the nuts tightened and check them time after time whether fastening. After finishing replacing the tyre, it should let technicians as soon as possible to adjust the nuts with required torque.



To fasten the nuts according to the sequence as shown in the above figure.

Tightening Torque:150~200N.m

After Tyre Replacement

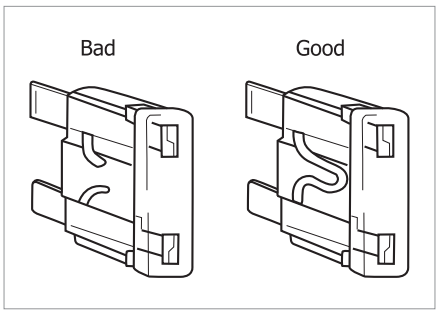
If you have a barometer, please remove the valve cover to check pressure. If the air pressure is lower than the specified value, slow traffic to the nearest service shop to charge.

If the air pressure is too high, please deflate to make the pressure to the required value. After checking and adjustment the tyre pressure, cap the valve cover well. If not, the tyre will leak. If the valve cover lost, it should buy one and equip well as soon as possible.

After replacement tyre, please place the flat tyre according to the aforementioned procedures and place the jack, the jack handle and the tools back the original position.

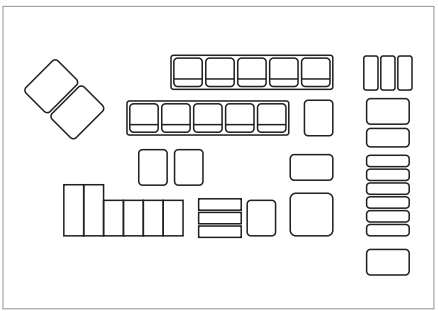
Fuse

Circuit Fuse



In order to prevent short circuit or overload from causing circuit system injury, it should equip fuse for each circuit. If the fuse burnt out, please contact the Refine franchise sales service shops to determine reasons for repair the system and replacement the fuse. When replacing the fuse it should use the same fuse of the fusing current.

Fuse Box



The fuse box of car light and other electric attachments is under the instrument of driver side. The circuit system name is listed on the cover of the relevant fuse box, as well as fusing current of the fuse. If any lights or electrical attachment in the vehicle does not work, one of reasons may be fuse burnt out. If fuse burnt out, the fuse wire connector disconnected.

Fire Extinguisher (if Equipped)

⚠ Notice

When replacing fuse, it should use the fuse of the same or low amperage. Don't use the fuse or substitute (such as foil wire) which fusing current is more than the required value; otherwise it will make the circuit heat and can cause fire risk.

If you suspect fuse burnt out, do according to the following procedures:

1. Flameout and closing all electrical switches.

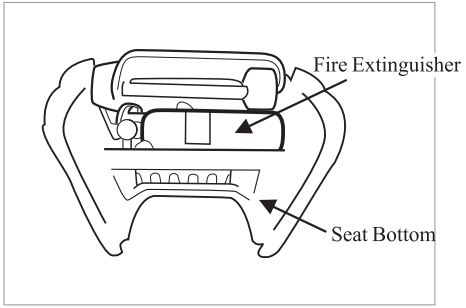
2. Open the fuse box and check each fuse. To pull the fuse out and can make it out (There is a small clip in the fuse box).

3. If you found a fuse burnt out, you should check other still.

4. As for new installation fuse, it should cooperate with the slot well. If having no spare fuses, you should buy the same or obtain from other accessories (for example CD player, cigarette lighter, etc.) which fusing current is more than the required value to replace.

⚠ Notice

If the new installation fuse burnt out again in very short time, it should determine the reasons and solve by the franchise sales & service shop authorized by Refine.



According to Chinese relevant legal requirements, it should be equipped with fire extinguisher for some of the vehicles.

Fire extinguisher should be placed on the bottom of the seat. It can take out the fire extinguisher by loosening the clip.

Size: Ø68 × 265mm

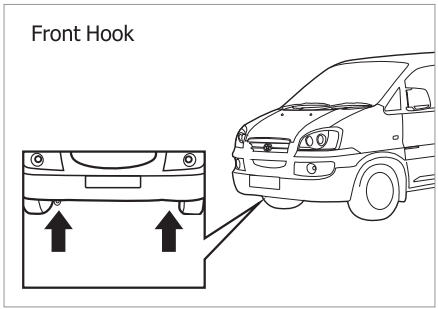
Note: For the method using fire extinguisher, please refer to the specification on the tank of fire extinguisher.

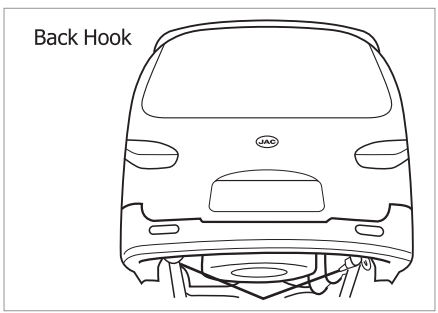
Traction Vehicle

When trailed it should use the special hook of the car. Since if used other part of the car for trailer, it will damage the car.

Before trailing, you should first know the relevant provisions of your location. Because of different local laws and regulations, different requirements are for different types of vehicles. Please enquire the nearest special sale service shop of JAC Refine before trailing.

The Traction hook is shown in the right figures.





Traction Your Car

- Make the transmission control lever at the neutral position.
- Ensure that the trailer's speed is within legal scope.
- As for the car with steering lock-up system, please rotate the ignition switch to “ACC”, and open the steering wheel. If using the turn signal lamp when traction, it may twist the ignition key to “ON” position.
- To prevent the exhaust gas from the anterior vehicle entering your car, you can make the flow control switch at the recycling position.
- The traction rope must be flexible so as not to drive the two vehicles. Therefore it can be used only by the synthetic rope or similar material made of elastic ropes. Where conditions permit, it is used traction rod more secure. When using traction rope, the driver of the tractor must be very balanced clutch engagement when start-up and shift. The driver of the draw car should pay attention to keep the traction rope tension.
- However, it should always pay attention to without overload or impacting load. When towing vehicle on firmness road, there always should be overload and damage for the linked parts.

•Before the traction vehicle starts its engine, it should be that uses other automotive batteries for emergency starter whenever possible, the specific method is described in "emergency start" section.

•The two drivers must know the characteristics of own vehicle for traction process. Unskilled driver cannot both be the two kinds of drivers. And the two drivers should maintain contact during the traction. Low speed for the two vehicles to avoid a sudden start or stop.

•The both vehicles should open the hazard warning lights.

•If the gearbox dysfunction or damage, the rear wheels of the towed vehicle should be away from ground.

•If the towed vehicle equipped with brake assistance system, the braking assistance may disappear, so it needs greater power for stamping on the brake pedal.

•If the towed vehicle equipped with power steering system, it needs greater power for control of the steering wheel.

•If the manual transmission or automatic transmission has no lubricant, it can be lifted only for the car driving wheels of the towed vehicle to be drawn.

•If the distance of traction more than 50 kilometers, the front of the towed vehicle must be lifted.

⚠ Notice

►Only when the tractor weight is less than your car's, it can do the traction.

►During the running-in period within 2,000 kilometers (1,200 miles) of new car, don't towing your car. Otherwise it can damage the engine or transmission.

Traction Hookup Device

Please select the appropriate traction hookup device to ensure the matching with the tractor or the towed vehicle and make the load evenly distributed to the chassis of the two vehicles. The traction hookup device should be fastened securely on the vehicles with using bolts by skilled worker. Don't use the temporary installations and fix in the bumper.

Trailer Braking Device

Trailer is a non-powered road vehicle which needs to be towed. There usually are trailer, semi-trailer, centre axle trailer and other types. It can be used for carrying passengers, cargo or traveling living and other purposes.

Some trailers are equipped with the braking system. If using trailers, you should ensure that it's braking system in line with local laws and regulations, as well as proper installation and operation accurate.

⚠ Notice

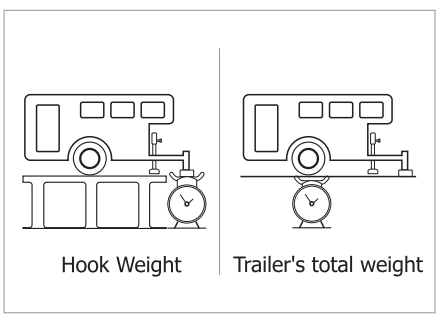
►Don't make trailer's braking system connect directly with traction vehicle brake system.

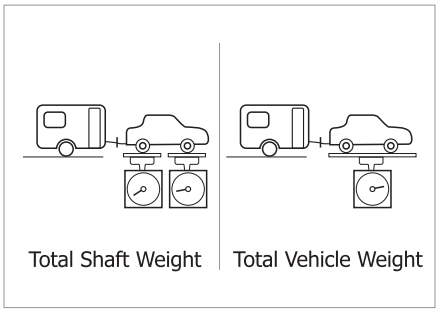
►As for using trailer, you should pay attention to coolant temperature and ensure the engine not overheating when running on slopes (tilt angle more than 12 degrees). If the thermometer pointer at "H" (thermal) region, you should immediately stop the vehicle to make the engine idling till completely cooled engine, and then start moving.

Safety Ball and Chain

If illnesses hanging connection between the tractor and the trailer or the towed vehicle, the towed vehicle will have the possibility of departing driving route to hit other vehicles or objects. To eliminate potentially dangerous situation, it is required to use safety ball and chain between the two vehicles in many regions.

Trailer Weight Limit

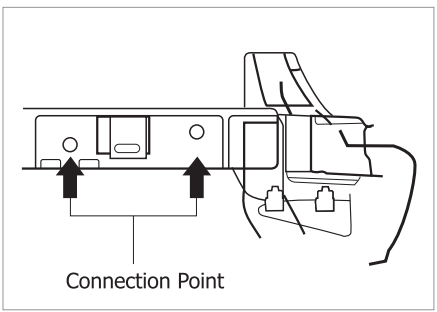




- The load weight at the trailer rear should not exceed the weight of the front. It should make about 60% load on the former and the remaining 40% in the back.
- The total weight of the tractor and the trailer can not exceed the total weight value of vehicle mark brand (GVWR). The total weight is overall weight including vehicles (including tractor and trailer), passengers, cargo, hookup devices and other equipments.
- Don't make front/rear bridge load carrying capacity exceed the total bridge weight (GAWR). Your transport baggage may not be more than the total weight of vehicle (GVWR), but may be more than the total bridge weight (GAWR). If trailer load unreasonable or excessive baggage in the hold, it can make the rear bridge overweight. Please re-distribute the load and re-examine the load of front/rear bridge.
- The maximum permitted values for the static vertical load is 60kg to the connected device.
- The maximum permitted values for hanging of the connection points:

Short Wheelbase: 1,120 mm

Long wheelbase: 1,190 mm



⚠ Notice

Upon traction of trailer, it should follow the requirements in the table below and the weight of the trailer can not exceed the security value as shown in the table below.

Trailer Type	The Maximum Weight of Trailer	Hook Weight
	Trailer Weight	
Belt Braking Type	1,500(3,307)	60(132.3)
Non-Braking Type	700(1,543)	—

⚠ Warning

►If it is inappropriate for the load between the tractor and the trailer, it will affect the vehicle steering and braking performance, lead to crashes and caused serious casualties.

►For the vehicle equipped with automatic transmission, only when no any load except the driver it can load traction trailer. Otherwise, the automatic transmission oil temperature will rise may lead to serious damage to the gearbox.

Operating Skills of Traction of Trailer

•Before traction for trailer, check the hanging device and the joints of safety ball and chain, as well as the driving lights, brake lights, steering signal lamp (if equipped).

•Traffic speed modest (no more than 100 km/h).

•Fuel Consumption is larger than usual during traction.

•To ensure that the engine braking efficiency and performance of rechargeable batteries, don't use shift 5 (manual transmission) or overdrive (automatic transmission).

•Ensure the load inside car stability during driving.

•Check the wheel pressure of the trailer and the tractor, small pressure will affect the operation. Inspection the spare tyre also.

•When using your car combination with trailer, it will be greatly influenced be upwind and shaking. You should maintain constant speed and make the steering wheel linear direction when a truck passing. If wind vibration very great, you should slow down from the opposite to the air swirl.

•When using parking brake for your car and the trailer, you should underlay obstruction block under the front wheels especially on the hillside. The parking brake should be very strong. And you should make the transmission control lever at 1 gear or reverse gear (manual transmission) or “P” gear (automatic transmission). In addition, you should underlay obstruction block under each wheel for the trailer.

•If the trailer with electronic brake, let your cars and trailers started moving, then the trailer brake controller ensure that the brake system can work. And you should check the electrical connections.

•During driving, you should always check whether the load is safety or not, the signal lights and the trailer brake can still work or not.

•During traction of trailer, you should avoid suddenly to start, accelerate or stop. Don't sharp turn and quickly transfer road.

•Don't stamp on the brake pedal for a long time and frequently. Otherwise lead to overheating, brake efficiency weakened.

When being on the downhill, you should use low gear and use engine to brake. When climbing long slope to use low gear, reduce speed to reduce the engine overheating or super load the changes.

•If you have to stop when climbing, don't stamp on the accelerator pedal since it would lead to overheating gearbox. Please use parking brake or foot brake.

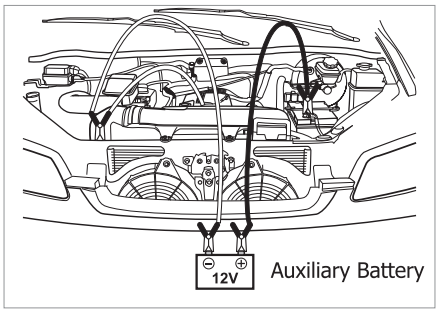
Note: If often traction, it is necessary to frequently check gearbox oil.

⚠ Nottice

When traction, if the engine overheating (temperature indicators point to the red area), please take the following measures to reduce failure or solve the problem:

1. Turn off the air-conditioning
2. Reduce speed
3. Climb with the low-grade
4. When parking, shuttling speed in the traffic stream, make the transmission control lever at parking or neutral position for high degree of engine idling.

Emergent Start



If your vehicle can not be started, it may be the reason that the battery power has been exhausted. Thus you can use the method of “Bridge Connection Starting”.

If no spare battery in your car, you may ask any near normal operation of a motor vehicle for help and use its battery as a supplemental battery to start your car on the assumption that the output voltage from its battery must be 12V.

When using bridge connection starting vehicle, please implement the following procedures:

1. If auxiliary battery in the other vehicle, it should make the two battery be as close as possible, but not for the two vehicles.
2. Shut down all unnecessary vehicle lights and facilities.
3. Connect the two cables according to the right way of the above figure.
4. Make one end of the jumper cable connected with the positive (+) terminal of the auxiliary battery and other end of the jumper cable connect with the positive (+) terminal of the fault vehicle's battery.
5. Get one end of the second jumper cable connected with the negative (-) terminal of the auxiliary battery and other end connected with a firm metal contact point away from the batteries (for example, engine support). Don't get the cables connected directly to the negative (-) terminal of the fault vehicle's battery.
6. When starting the engine of non-fault vehicle, it should keep the engine running just a few minutes. Thus it can make a confirmation that the auxiliary battery is fully charged. When using bridge connection starting, it should maintain the speed of the engine of the vehicle with the auxiliary battery is 2,000rpm or so.

7. The next step is to start the fault vehicle. After starting it should maintain the bridge connection and make the engine of the fault vehicle run a few minutes on high idling state 2,000rpm.

8. When dismantling the jumper cables, it is the reversal process of the connection operation. Firstly remove the negative (-) terminal, then for the positive (+) terminal. As for unknown reasons for the battery power exhausted, you should immediately contact Refine franchise special license sales & service shop to inspect your car.

Color Marker of Jumper Cable

Positive Cable: usually red

Negative Cable: usually black, brown or blue.

⚠ Notice

►Don't connect negative terminal to the negative of fault vehicle battery since electric spark may ignite the explosive gases overflowing from the battery.

►Don't clamp negative terminal with the parts of the fuel supply system or the brake pipe.

►Don't let the non-insulation parts of the electrode terminal inter-contact. The jumper cable connected with the positive of the battery should not be contacted with conductive components to prevent short-circuit risk.

►When laying jumper cables, don't let them contact to the inner rotation parts of the engine.

►Don't bend and face to battery to avoid corrosion risk.

►Let open flame, lighted cigarettes away from the battery to prevent explosion hazard.

►Start engine in accordance with the procedures described in chapter “Starting Engine”.

►If the engine doesn't start immediately, it is necessary to terminate after 10s and re-start again after about half a minute.

►Open the vehicle fan equipped for the auxiliary battery and the heating switch of the rear windscreen in order to reduce the peak voltage caused when removing the cables.

►The vehicle headlamps must be closed because the peak voltage produced when removing the cables can damage the bulbs.

►If the engine running, to remove the two cables on the contrary order.

Engine Overheating

If the thermometer instructions engine overheating and you can feel the power drop or hear the voice of knocking, it may be the engine overheating. Under this condition you should:

1. For safety, drive your car to roadside and stop it as soon as possible.

2. Let the transmission control lever at “P” position (automatic transmission) or neutral position (manual transmission), and draw back the grip brake. If the air-conditioned open, please switch off.

3. If coolant of the engine flows out or steam leaks from the hood of the engine, it should open the hood when without coolant outflow or stream leakage. If not see that about coolant or steam, you may make the engine run to check whether the fan work., otherwise stop the engine.

4. Check the pump belt whether loss, if not, check whether it is tension. If the belt has no problem only based on visual inspection, you should check whether the coolant leaks from the radiator and the hose (if having used the air condition, it is normal for cold water outflow when parking).

5. In case of water pump belt damaged or coolant leakage from the engine, you should immediately stop and contact the nearest special sales service shop of JAC Refine for help.

6. If you can't find out the reasons of overheating, please wait till the engine temperature returns to normal. If the volume of the coolant reduces, you should remove the radiator cap carefully and add coolant till the coolant interface reach to the marker of half of the volume.

7. When the engine rotates, take note of whether overheating. If have, please contact the nearest special sales service shop of JAC Refine for help.

⚠ Notice

Serious lack of cooling liquid shows the cooling system leaks, and then you should contact the special sale service shop of JAC Refine to check.

⚠ Warning

►When the engine running, hair, hands, clothing should be away from the fan, belt and other moving parts to prevent harm.

►During the engine works or off within 30 seconds, don't operate the fuel injection system since the high-pressure pump, jet, high-pressure pipe are still in a high-pressure state at the moment that the engine just stops.

►If fuel leakage causes fuel injected to your body, it will lead to serious injury. Person who use the pacemaker should not close the engine storehouse ECU or be within 30cm of the wiring harness scope since high-current can cause a tremendous magnetic field.

►Don't remove the radiator cap when the engine is heat. Otherwise, it will lead to coolant spray out and have scald accident.

6 Technical Data

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Vehicle Specification

Item		Long Wheelbase	
Seating		9	11
Total Length (mm)		5,075	
Total Width (mm)		1,820	
Total Height (mm)		1,970	
Wheelbase (mm)		3,080	
Wheel base (mm)	Front	1,570	
	Rear	1,545	
Kerb Weight		2,000	
Total Weight		2,800	2,860

Fuel System

Item	Gasoline Car	Diesel Car
Fuel Tank Capacity	80L	65L
	95L	80L
Fuel Specification	Fuel Specification: 93# and Above Unleaded Petrol	0# or -30# Diesel Oil

Tyre

Standard Tyre	215/70R15 (Aluminum Wheel Rim) 205/70R15 C (Steel Wheel Rim)
Spare Tyre	205/70R15 (Aluminum Wheel Rim)

Four-Wheel Alignment

Item	Specification and Parameter	Remark
Toe-in	0 ± 3mm	Right and Left Difference is Within 30'
Camber Angle	0° ±30'	
Castor Angle	3° ±30'	
King Pin Inclination Angle	15° 40'	

Electrical Equipment

Item	Diesel Engine	Petrol Engine
Battery	12V/90AH (100AH, in cold state) MF	12V/68AH MF
Generator	13.5V/110A	13.5/110A
Starter	12V/2.0kw 2.2kw(A/TM)	12V/1.2kW

Engine

Item	Diesel Engine			Petrol Engine				
Engine Type	D4BH	4DA1-1A	4DA1-2B1	4GA1/4GA1–B	G4JS	4GA1-2B	4GA3	4GA3-1B
Cylinder Diameter*Stroke	91.1*95	93*102	93*102	86.5*100	86.5*100	86.5*100	85*88	85*88
Maximum Power (kW)	76.8	80	80	110	100.7	115	95	130
Maximum Speed (r/min)	3,800	3,600	3,600	5,500	5,500	5,750	6,000	5,500
Maximum Torque (Nm/r/min)	235/2,000	240/2,000	240/2,000	210/3,000	193/2,500	220/3,000	190/3,000	250/2,000
Total Displacement (ml)	2,476	2,771	2,771	2,351	2,351	2,350	1,997	1,997
Compression Ratio	21	18.2	17.5	10	10	10	10	10
Ignition Sequence	1—3—4—2			1—3—4—2				
Idle Speed (rpm)	750 ± 50			750 ± 50				

Oil Specification

Item		Recommendation		Quantity (L)
Engine Oil (Diesel Engine)	T/C	API CD or Above	SAE30 (0℃-40℃) SAE20W-40 (Above -10℃) SAE15W-40 (Above 15℃) SAE10W-30 (-20-40℃) SAE5W-30 (Below 10℃)*1	Engine Oil: 6.1 At Oil Pan: 4.9
Engine Oil (Petrol Engine)	EC	API SG or SG/CD	SAE5W-40 (Below 20℃ or 68℉)*1 SAE5W-30 (Below 10℃ or 50℉)*1 SAE5W-20 (Below -10℃ or 14℉)*1: 2SAE10W-40 or 10W-50(Above -25℃ or 68℉) SAE10W-30 (from -25℃ or −13℉ to −40℃ or 104℉) SAE15W-40 or 15W-50 (-15℃ or above 5℉) SAE20W-40 or 20W-50 (-10℃ or above 14℉)*1	Engine Oil: 6.1 At Oil Pan: 2.6
Manual Transmission Oil		GL-4 75W/90		2.3

<table>
<tr><th>Item</th><th>Recommendation</th><th colspan="3">Quantity (l)</th></tr>
<tr><td>Automatic Transmission Oil</td><td>ATF DEXRON Ⅱ, ATF SP</td><td colspan="3">7</td></tr>
<tr><td>Power Steering Oil</td><td>PSF-3</td><td colspan="3">0.8</td></tr>
<tr><td>Coolant</td><td>High Quality Glycol Applicable for Aluminum Water Tank</td><td colspan="3">As Required</td></tr>
<tr><td>Clutch and Brake Fluid</td><td>DOT4</td><td colspan="3">As Required</td></tr>
<tr><td>Front and Rear Wheel Bearing</td><td>7019-1 (Extreme Pressure Composite Lithium Based Grease 2#)</td><td colspan="3">As Required</td></tr>
<tr><td rowspan="3">Rear Axle</td><td rowspan="3">General Region (-30℃-30℃)
API GL-5 Class (SAE 90)
Tropic Region (Above 30℃)
API GL-5 Class (SAE 140)
Frigid Region (Above -30℃)
API GL-5 Class (SAE 80)
Equipped with Limited Side Slip Differential
Mobil Filrex 33 or Equivalent
(API GL-5class SAE 90)</td><td></td><td>Petrol</td><td>Diesel Oil</td></tr>
<tr><td>Domestic</td><td>1.9</td><td>3.0</td></tr>
<tr><td>Imported</td><td>1.6</td><td>2.7</td></tr>
<tr><td>Steering Gear Housing Body</td><td></td><td colspan="3">As Required</td></tr>
</table>

*1 Limited By Driving Condition and Region *2 SAE 5W-20 is not Recommended if Vehicle Runs at High Speed